

TOSHIBA

OWNER'S MANUAL

Video Cassette Recorder

Hi-Fi



V-855

VIDEOplus

Before using this VTR

See the Quick Start Guide to set up this VTR.

RECORDING 25
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Welcome to the high quality picture world created by the TOSHIBA V-855B. Read this manual carefully before using, and enjoy the various convenient functions of this VTR.

Record the model and serial Nos. located on the rear of your VTR (Video Tape Recorder) in the spaces provided below.

Model No. _____ Serial No. _____

General Information

If the socket outlets in your home are not suitable for the plug supplied with this unit, the plug must be cut off and an appropriate one fitted.

The plug severed from this mains lead must be destroyed as it is hazardous if inserted into a live socket.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

BLUE: NEUTRAL

BROWN: LIVE

As the colours of the wires in the mains lead of this unit may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire that is coloured blue must be connected to the terminal in the plug which is marked with the letter N or coloured black.

The wire that is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Do not connect either wire to the earth terminal which is marked by the letter E or by the safety earth symbol \pm or coloured green or green-and-yellow.

Use a 3A fuse which is approved by ASTA or BSI to BS1362.

Always replace the fuse cover after changing the fuse.

To obtain the best performance and lasting satisfaction from your VTR;
see that it is properly installed with an adequate antenna system;
have it regularly checked by a qualified technical organization;
ensure that it is correctly used by all in the family.

ABOVE ALL:

Never let children insert any objects into holes or slots in the case as it may result in electric shocks.

Never guess or take a chance with your VTR—it is better to be safe than sorry!

PRECAUTIONS

- Do not install the VTR in a location near heat sources, such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibrations or impacts.
- Allow adequate air circulation to prevent internal heat build-up. Do not place the VTR on soft surfaces (rugs, blankets, etc.), too near materials such as curtains and draperies or in a built-in installation such as a bookcase or rack.
- Keep the VTR and the video cassettes away from strong magnetic fields.
- To disconnect the lead, pull it out by the plug. Never pull the lead itself.
- Do not drop any inflammable or metallic objects, or liquid into the VTR. This may cause damage to the unit.
- Do not hit or shake the unit when moving it. This may cause damage.
- Remove the cassette from the VTR when not in use.
- Save the original carton and packing materials: they will come in handy if you ever have to transport your VTR. For maximum protection, repack the unit as it was originally packed at the factory.
- Do not use volatile liquids such as insect spray near the unit.

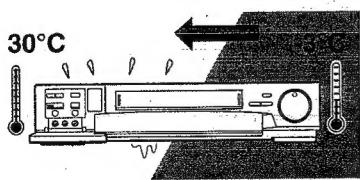
Do not leave rubber or plastic products touching the unit for a long time. They will mar the finish.

MOISTURE CONDENSATION:

Never operate this VTR immediately after moving it from a cold location to a warm location. In this case, connect the power cable of the VTR to an AC outlet to turn the power on and leave it for TWO TO THREE hours without operating it. When the VTR is exposed to such a change in temperature, moisture may condense on the cylinder inside of the VTR, one of its most crucial internal parts. If moisture condensation occurs inside the VTR, the cassette tape may stick to the surface of the cylinder causing damage to the tape itself or the video head.

Moisture condensation is most likely to occur in the following cases:

- When moved from a cold location to a warm location.
- In a room rapidly heated or in a place where the VTR is directly exposed to cool flow of air from an air-conditioner or other electrical appliance.
- In a room with excessive dampness or high humidity.



HQ
HIGH QUALITY

HQ VHS is compatible with existing VHS equipment.

Only cassettes marked **VHS** can be used with the VTR.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. TO PREVENT ELECTRIC SHOCK, DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

The unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the unit itself has been turned off.

NOTE:

The rating plate and the safety caution are on the rear of the unit.

IMPORTANT:

Purchasers and users of video tape recording machines are warned that, in the absence of appropriate licences from the copyright owners, the recording of television broadcasts or the re-recording of prerecorded video tapes or tapes of television broadcasts will usually infringe the rights of copyright owners in the broadcasts or tapes and other cinematographic, dramatic, artistic, sound recording, musical or literary copyrights. Infringement of copyrights is unlawful.

Follow the below drawing for leaving of space around your video recorder to ensure proper ventilation.



This product conforms with the requirements of Directives 73/234/EEC, 89/336/EEC, 92/31/EEC and Articles 5 and 13 of Directive 93/68/EEC.

FEATURES

Video Plus+

This VTR is equipped with the Video Plus+* programming system which allows easy unattended recording. All you have to do is to choose the programme you want to record from your TV listings pages and enter the PlusCode* to a maximum of 9 digits published next to the programme title.

* Video Plus+ and PlusCode are trademarks of Gemstar Development Corp. Video Plus+ system is manufactured under license from Gemstar Development Corporation.

AUTO SET-UP

Your VTR can automatically store TV stations in the memory and set the clock, if you connect only the aerial cable to the VTR and the power cable to the wall outlet.

HIGH QUALITY PICTURE

The HQ (High Quality) feature reduces the noise of the brightness and colour signals. Image outline and detail are improved.

VIDEO SYSTEM COMPATIBILITY

• VIDEO SYSTEM

This VTR is compatible with PAL and NTSC 4.43 video system.

• BROADCAST SYSTEM

This VTR can receive and record PAL I programmes.

• NTSC ON PAL TV

This VTR enables you to watch a tape recorded on an NTSC video system.

Hi-Fi SYSTEM

Hi-Fi recording and Hi-Fi playback are possible.

SP/LP TAPE SPEED MODES

This VTR can record and play back in the SP or LP tape speed.

MULTI BRAND REMOTE CONTROLLER

The remote controller is compatible with various TV brands and allows basic control of your TV.

ALL-IN-ONE OPERATION

Pressing one of the three "ALL-IN-ONE" buttons allows many operations at once to be performed for both the TV and the VTR.

NICAM PROGRAMME COMPATIBILITY

This VTR incorporates a special decoder that can receive NICAM broadcast programmes. Not active in the area where NICAM broadcasts are not available.

16:9 (WIDE SCREEN) COMPATIBILITY

This VTR adjusts the image of a received wide TV programme to fill the wide screen.

SATELLITE RECEIVER-ATTACHABLE

This VTR can be connected to your satellite receiver and you can enjoy watching or recording satellite programmes through the VTR. You can even watch the satellite programme while recording a regular TV programme, and vice versa.

SATELLITE RECEIVER CONTROL

A connected satellite receiver can be controlled by this VTR. It is possible to record many different satellite channels whilst you are absent, as the VTR can automatically select satellite channels as well.

VARIABLE SPEED PLAYBACK

The JOG dial and SHUTTLE ring let you play back at variable speed from still picture to forward or reverse picture search speed.

COUNTER FUNCTION

- **Linear time counter function:** Shows the elapsed time of the tape in real time during recording or playback.
- **Remaining time display function:** Shows the remaining time of the tape in real time.
- **Index/skip search function:** You can easily locate the desired programme using the index signal registered on the tape.

TIMER FUNCTION

On-screen Programming (OSP)

- The clock, timer programme recordings can be easily set by on-screen programming, using the remote controller and the on-screen display.
- Up to 6 programmes for recording within a month can be set.
- The one-touch timer recording enables you to easily make timer programmes for recording.

PDC (Programme Delivery Control System)

In timer recording, you can record a TV programme from beginning to end, even if its start time or end time is changed, depending on TV stations.

DIGITAL AUTO TRACKING

The tracking of the playback picture is automatically adjusted for best possible picture.

FLYING ERASE HEAD

The flying erase head allows continuous clean editing of two recordings without distortion.

VIDEO INSERT EDITING

You can easily replace a scene on a recorded tape with another scene by importing a picture and sound from external equipment.

AUTO HEAD CLEANER

The auto head cleaner automatically cleans the video head.

1

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Provides important notes and general explanation of the VTR, including names of the buttons, jacks, etc.

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IDENTIFICATION OF CONTROLS	6
• Front Panel	
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• Rear Panel	
• VTR Display	

2

PREPARATION

Explains what you need to do before operating the VTR.

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PLAYBACK

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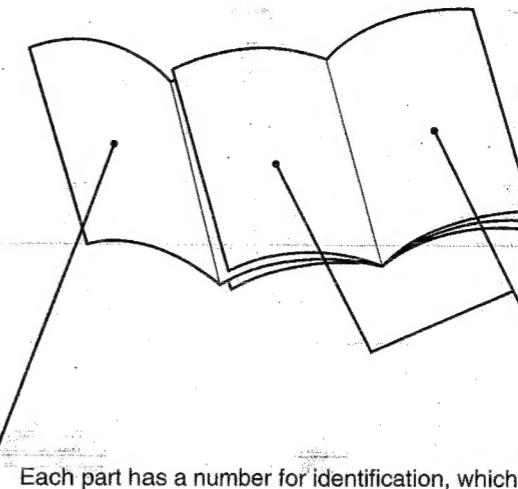
5

ADDITIONAL INFORMATION

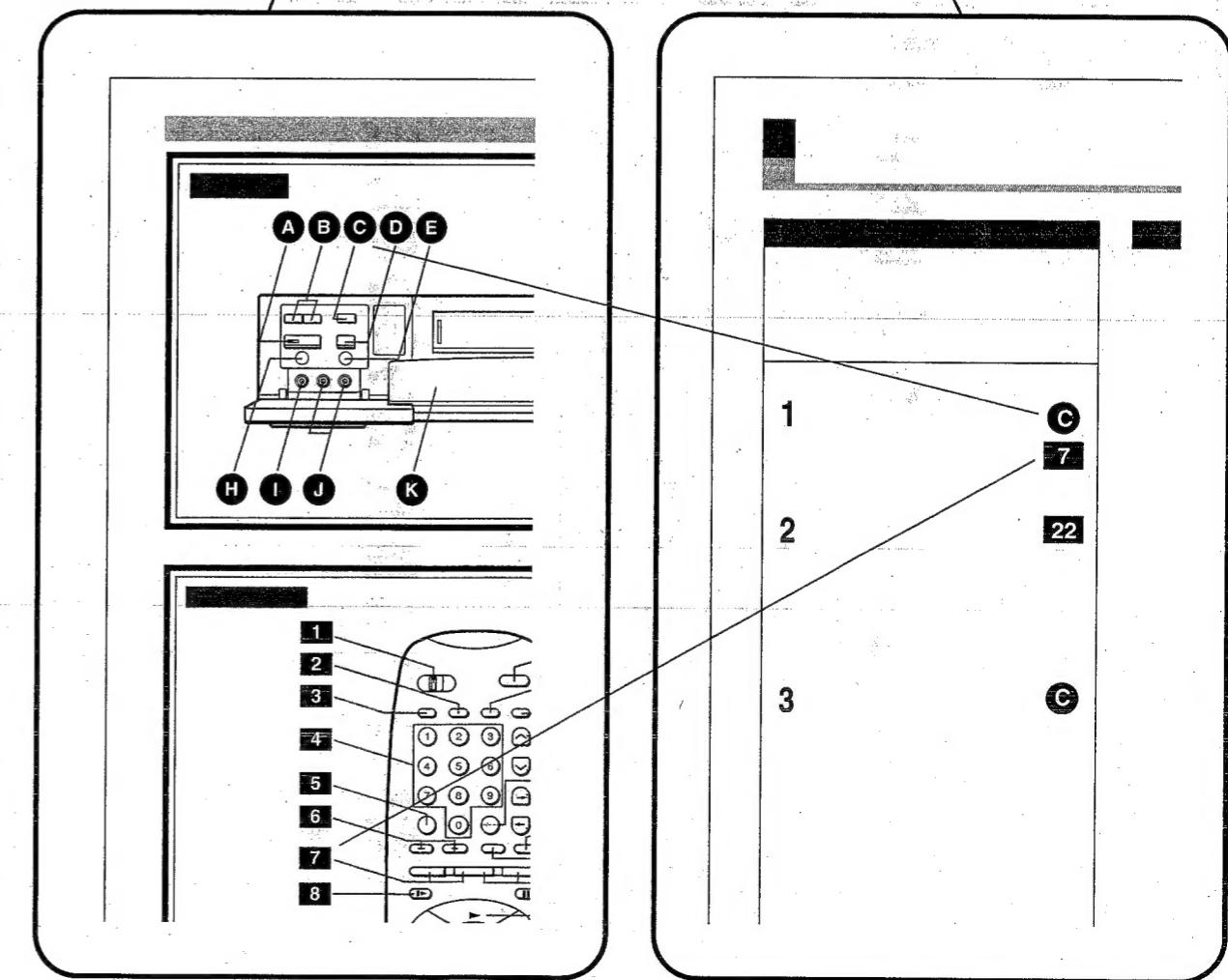
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For convenient use of this manual

Fold out the leaf of this page.

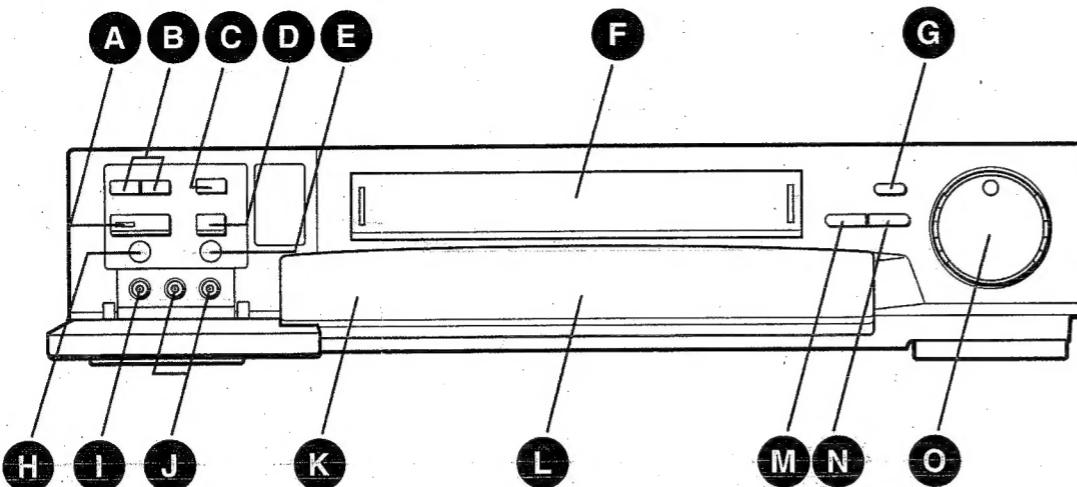


Each part has a number for identification, which is used also in the texts for reference.
You can easily locate the parts using these numbers.



• Numbers in the circle refer to the parts on the front panel; those in the square to the remote controller.

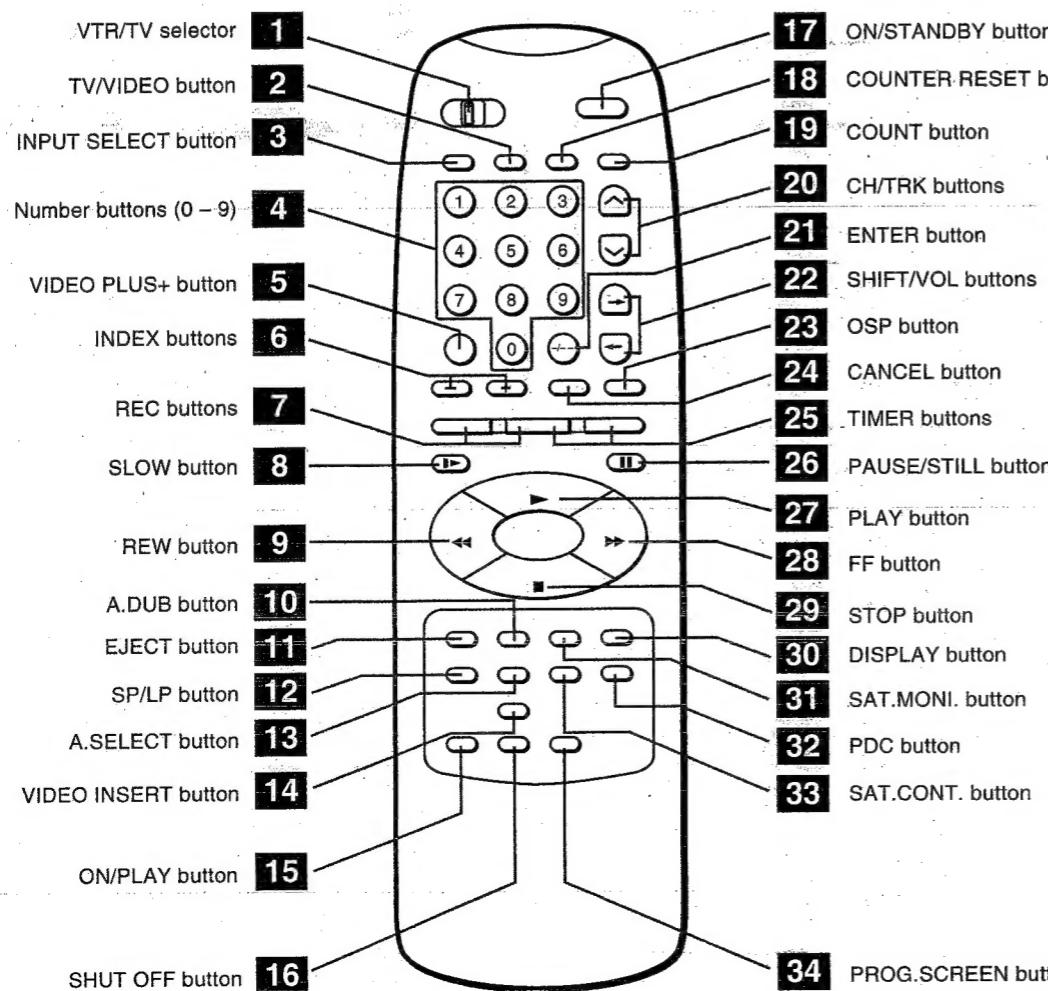
Front Panel



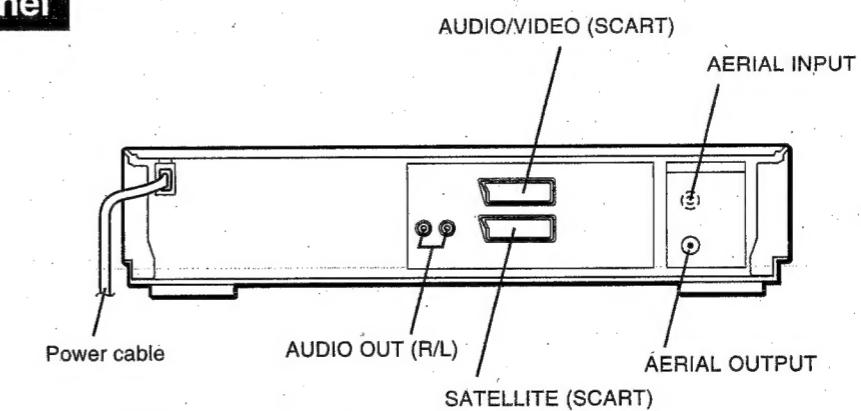
- A ON/STANDBY button
- B CHANNEL buttons
- C REC button
- D EJECT button
- E SAT. CONTROL jack*
- F Cassette compartment
- G PAUSE/STILL button
- H MIC jack
- I LINE IN 2 VIDEO jack
- J LINE IN 2 AUDIO L/R jacks
- K Remote sensor
- L VTR display
- M PLAY button
- N STOP button
- O JOG dial/SHUTTLE ring

* This jack is for a special case of satellite receiver setting.
Not in general use.

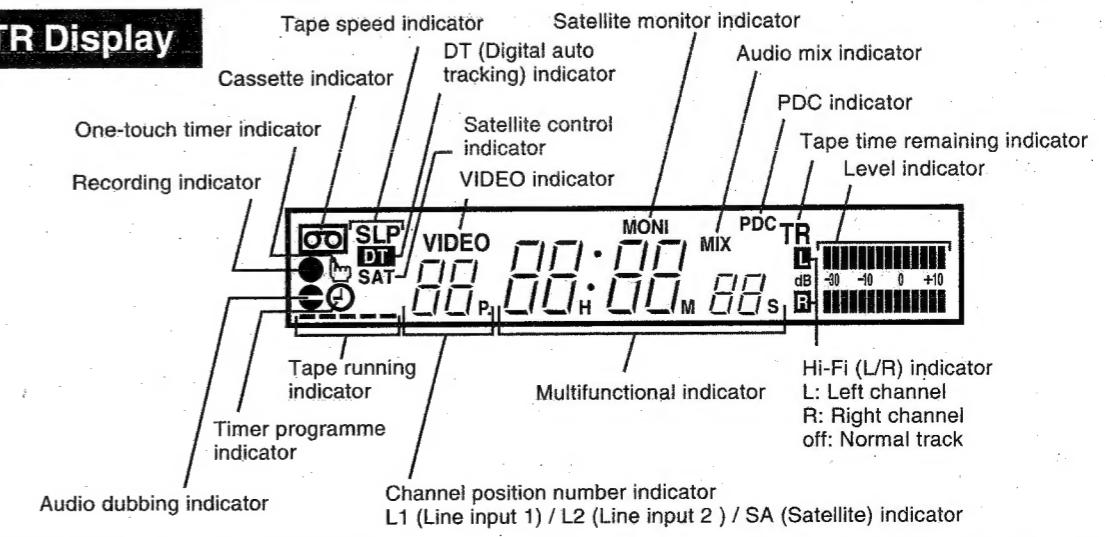
Remote Controller



Rear Panel



VTR Display

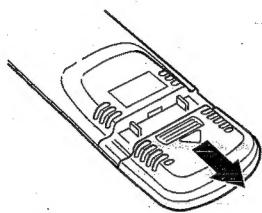


HOW TO USE THE REMOTE CONTROLLER

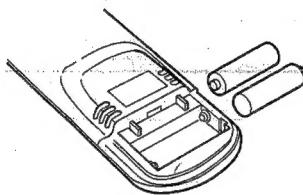
This section explains how to get ready for remote controller operation.

Setting up the Remote Controller

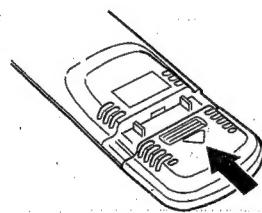
1 Open the battery compartment lid on the rear panel.



2 Install 2 batteries (R03 size) following the polarity diagrams.



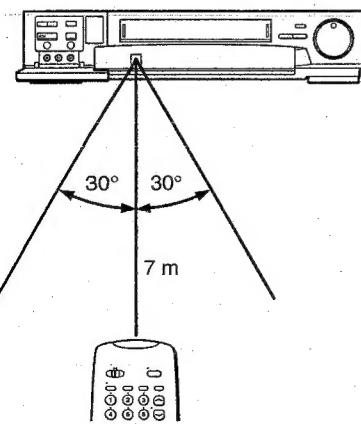
3 Close the battery compartment lid.



4 Point the remote controller at the VTR and press the buttons within the operating range as illustrated.

Distance: within about 7 m from the front of the remote sensor

Angles: within about 30° in every direction



Notes on Batteries

- The life of the batteries is about 1 year depending on the conditions of use.
- If the remote controller does not operate correctly, replace all batteries with new ones.
- Do not dispose of the batteries by fire.
- If the remote controller is not to be used for a long period of time, remove the batteries to avoid possible damage from battery corrosion.

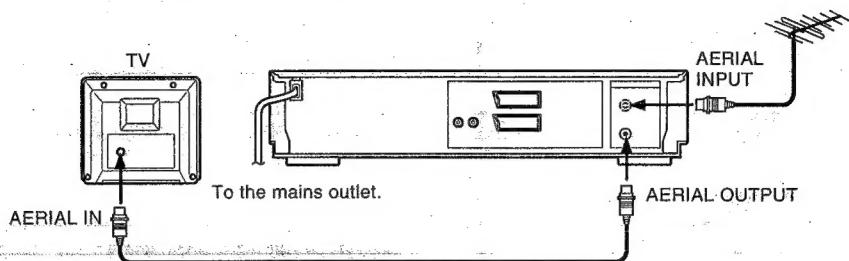
Caring for the Remote Controller

- When using the remote controller, press the buttons at intervals of about 1 second to ensure the correct mode of operation.
- Keep the remote controller away from extremely hot or humid places and avoid sharp impacts.
- Do not expose the remote sensor of the VTR to a strong light source such as direct sunlight or illumination.
- Be careful not to spill water on the remote controller or to place it on anything wet.

Before you use this VTR, it is necessary to connect it to your TV.

Connection to Your TV (Without the AUDIO/VIDEO SCART Socket)

If you use this connection, you must perform "Setting the Video Channel" below.



Setting the Video Channel

Information

The VTR signals are sent to your TV from the AERIAL OUTPUT socket. Your television must have a channel set aside exclusively for these VTR signals. This is called the video channel.

Preparation

Set the VTR/TV selector to "VTR".

1

1 Turn on the TV.

2 Select a free channel on the TV which you wish to use for your video picture, for example channel 9.

This channel 9 will be only used for watching a video picture.

3 Press the ON/STANDBY button to turn on the VTR.

17

A



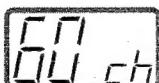
4 Hold down the OSP button for more than 5 seconds.

23

VTR display

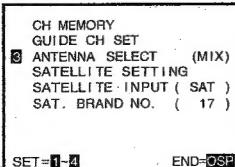


VIDEO



5 Tune the TV (on channel 9 for example in step 2) so that the following screen is shown clearly. (For tuning the TV, refer to the TV's manual.)

TV screen

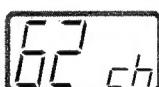


6 If after tuning (in step 5), you still have some interference because of neighbouring broadcast channels, press the SHIFT button to select another video channel between channels 50 and 67.

22



VIDEO



Re-tune the TV to around UHF channel 62 (for example), and confirm the screen is shown clearly.

7 Press the OSP button.
Video channel setting is complete.

23

Note on the antenna output

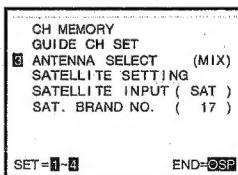
On the screen in step 5, the antenna output can be set to "MIX" or "SW".

(Applied when the VTR is connected to your TV only via the AERIAL OUTPUT socket.)

Press number button 3 to select "MIX" or "SW".

4

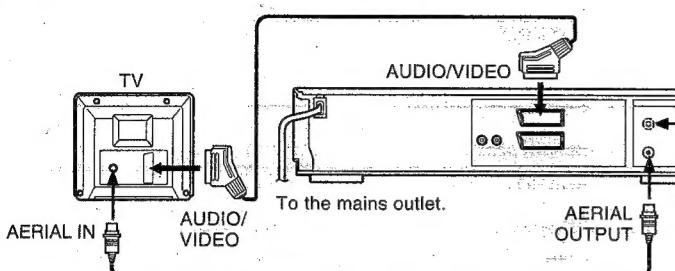
3



MIX: You can watch a video picture on the video channel regardless of whether or not you have pressed the TV/VIDEO button. The switch should only be set to "SW" if the video pictures or TV pictures cannot be obtained clearly.

SW: You can watch a video picture on the video channel only when the "VIDEO" indicator is lit in the VTR display by pressing the TV/VIDEO button.

Connection to Your TV (With the AUDIO/VIDEO SCART Socket)



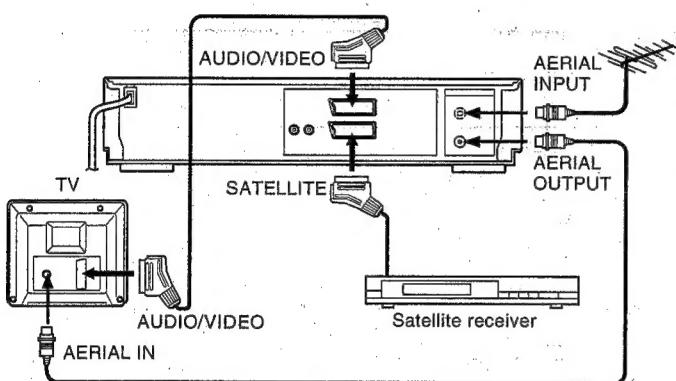
To watch a picture from the VTR using this connection, insert a cassette and press the **PLAY** button on the remote controller or front panel of the VTR.

27
M

Note

You must use this method for stereo playback on the TV.

Connection to a Satellite Receiver

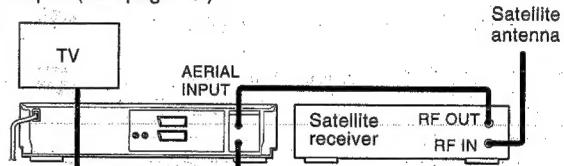


- To watch a picture from the VTR using this connection, insert a cassette and press the **PLAY** button on the remote controller or front panel of the VTR.
- To watch or record a programme from the connected satellite receiver, press the **INPUT SELECT** button so that "SA" indicator appear in the VTR display. (See page 26.)

27
M
3

Note

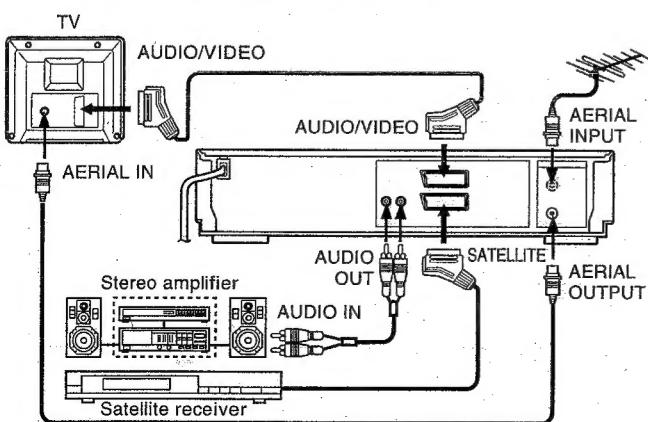
If your satellite receiver does not have a SCART socket, it can be connected using RF lead between aerial and the VTR. Set a spare channel on the VTR for the satellite output. (See page 13.)



Additional Connections

■ Connection to a stereo amplifier

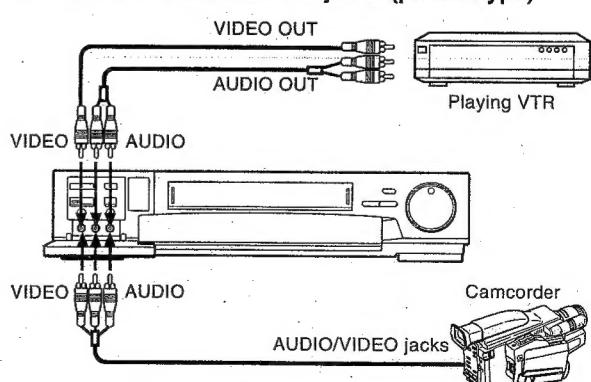
You can obtain a dynamic sound output through your Hi-Fi system when you playback a tape recorded in Hi-Fi stereo on this VTR. Connect the VTR to a stereo amplifier using an audio cable.



Note

The stereo amplifier must have the audio input capability.

■ Connection to other VTR or external equipment using the LINE IN 2 AUDIO/VIDEO jacks (phono type)



- Connect another VTR or a camcorder to the LINE IN 2 (AUDIO, VIDEO) jacks on this VTR.
- When you watch or record a picture from the connected equipment, press the **INPUT SELECT** button so that "L2" appear in the VTR display. (See page 36.)
- If the connected equipment is monaural (has one audio output jack), connect to the L/MONO side of the AUDIO jacks on this VTR.

3

MULTI BRAND REMOTE CONTROLLER

The remote controller can be compatible with various brands of TV by setting their control codes. The TOSHIBA code has initially been set to control TOSHIBA TVs.

Setting Control Codes

Preparation

Set the VTR/TV selector to "TV".



1 While holding down the **OSP** button, enter the two digits of your TV's brand code (listed right) using **number buttons**.

Hold down.



example



1

23

4

2 Release the **OSP** button.

23

3 Point the remote controller at your TV and use each button listed below to make sure that your TV is operated correctly.

ON/STANDBY	To turn the TV on or off.	17
CH	To select TV channels in the upper or lower direction.	20
VOL (Volume)	To adjust the sound level.	22
INPUT SELECT	To select an external source such as a VTR.	3
Number buttons/ ENTER button	To select TV channels. Way of use may differ with models of TV. Check how they work on your TV. Ex. To select channel 3: • 0→3 • 0→3→ENTER • ENTER→3 To select channel 16: • 1→6 • 1→6→ENTER • ENTER→ENTER→1→6	4 21

Important

Some TVs may not respond to all the operations above, or may not be operated at all with this remote controller. In this case, operate your TV with its own remote controller.

Notes

- For some brands, several control codes (brand codes) are allocated. Try each of them until the buttons work on your TV.
- If you replace the remote controller's batteries, set the brand code again.

Table of Brand Codes

Brand name of your TV	Brand code
TOSHIBA	01, 14, 15, 16, 17, 19
AKAI	08
BANG & OLUFSEN	20
BLAUPUNKT	04
BRANDT	11
BRIONVEGA	20
CGE	19
CONTINENTAL EDISON	22
FERGUSON	11, 24, 25
FINLUX	02, 15, 20
FISHER	08
FORMENTI	20
GOLDSTAR	02
GRUNDIG	04, 15, 19
HITACHI	06, 10, 11, 22
IMPERIAL	19
JVC	07
LOEWE	02
LOEWE OPTA	02, 20
METZ	20
MITSUBISHI	02, 09, 14
MIVAR	19
NOKIA	21
NORDMENDE	10, 11, 22
PANASONIC (NATIONAL)	03, 21, 26
PHILIPS	02, 18, 20
PHONOLA	02, 18, 20
PIONEER	11, 21
RADIOLA	02, 18
RADIOMARELLI	20
REX	21
SABA	10, 11, 20, 21, 22
SALORA	21
SAMSUNG	02
SANYO	08, 14
SCHNEIDER	02
SELECO	21
SHARP	05, 14
SIEMENS	04
SINGER	20
SINUDYNE	20
SONY	13, 14
TELEAVIA	11
TELEFUNKEN	11, 24
THOMSON	10, 11, 22
WEGA	20
YOKO	02

INITIAL SETTINGS USING ON-SCREEN DISPLAY

Using the screen displays, you can easily make necessary settings.

Auto Set-Up

Use this procedure if the automatic TV station storing and clock setting need to be made again.

Preparation

- Turn on the TV, and select the video input mode or video channel if you made the aerial connection (page 9).
- Set the VTR/TV selector to "VTR".
- If your satellite receiver is connected using an RF lead, select SKY ONE on the satellite receiver. Auto set-up will allocate position number 6 on the VTR for the satellite output.

1

1 Press the **ON/STANDBY** button to turn on the VTR.

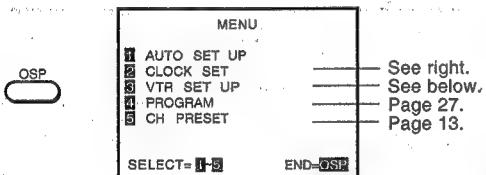
17

A

23

2 Press the **OSP** button.

The MENU screen appears.

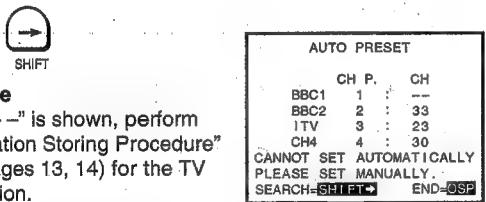


3 Press number button 1 to select "AUTO SET UP".

4

22

The VTR starts the automatic TV station storing and clock setting if you press the **SHIFT** (→) button.



4 Press the **OSP** button twice to return to the normal TV screen.

23

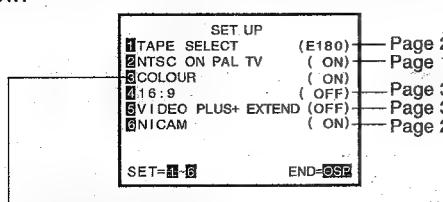
Note

If the time of the clock is not correct after this procedure, perform "Setting the Clock" on this page.

Optional Settings on the SET UP Screen

If you press **number button 3** while the MENU screen is displayed, the screen turns to the SET UP screen. For details on each item, refer to pages respectively as below.

4



— Press **number button 3** to select "OFF", if the TV programme or the tape is monochrome.

4

Setting the Clock

The item to be set blinks. You can change the position by pressing the **SHIFT** buttons.

22

Example To set the clock to 14:30 on August 25, 1995

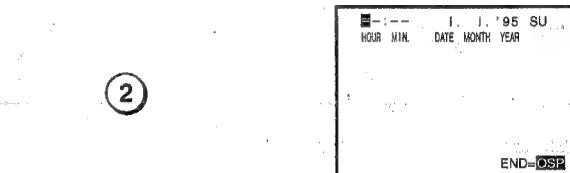
1 Press the **OSP** button.

The MENU screen appears on the TV.

23

2 Press **number button 2** to select "CLOCK SET".

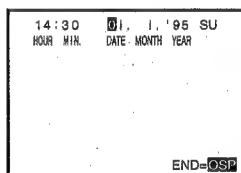
4



3 Set the hours and minutes. (24 hours clock format)

4

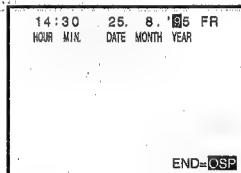
1 → 4 → 3 → 0



4 Set the day and month.

4

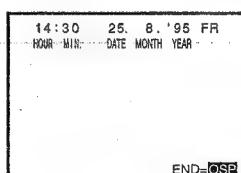
2 → 5 → 0 → 8



5 Set the year with its last two digits.

4

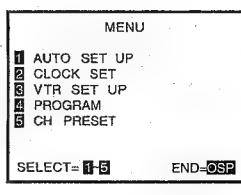
9 → 5



6 Press the **OSP** button. Now the clock starts.

23

OSP



7 Press the **OSP** button again to exit.

23

7 Repeat steps 4 to 6 for other TV stations, and for satellite stations if your satellite receiver is not connected by a SCART (page 10).

Select position numbers in step 4 as follows.

BBC2	on position number 2
ITV	on position number 3
CHANNEL 4	on position number 4
Satellite	on position number 6

Record all position numbers you stored on the VTR in the chart (GUIDE Channel Table) below so that you will be ready to use the Video Plus+ recording.

8 Press the **OSP** button.
Channel tuning is now finished.

OSP

Once station storing is done, you can select a TV programme by the position number on which the TV station is stored.

GUIDE Channel Table

TV stations	GUIDE	Position number in which the TV station has been memorized on the VTR.
BBC1	001	1
BBC2	002	2
ITV	003	3
CHANNEL 4	004	4
RTE (IRELAND)	005	
NETWORK 2 (IRELAND)	006	

Satellite stations	GUIDE	Channel on your satellite receiver	
		*A	*B
SKY ONE	101	1	8
SKY NEWS	102	2	12
SKY MOVIES	103	3	16
THE MOVIE CHANNEL	104	4	18
SKY SPORT	105	6	20
NICKELODEON / NICK AT NIGHT	106	7	46
EUROSPORT	107	16	4
GALA VISION	108		
MTV EUROPE	109	14	15 or 22
CHILDREN'S / FAMILY & CHINESE CHANNEL	110	10	35
SKY MOVIES GOLD	111	5	26
BBC WORLD SERVICE	112		
RTL 4	113		
FILMNET +	114		
RTL PLUS INTERNATIONAL	115		
SAT 1	116		
PREMIERE	117		

Skipping Channels

You can prevent the use of certain position numbers.

- 1 Set the VTR to the tuning mode following steps 1 to 3 of the station storing procedure.
- 2 Select the position number you want to skip with the **CH/TRK** button.

Example To skip position number 4.



43 ch

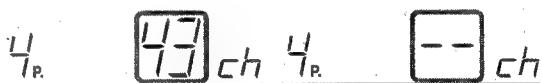
- 3 Press **number button 3**.

The following indication will appear in the VTR display with the skip function on or off.

3

Skip function off

Skip function on



If you press **number button 3** again, the TV channel number will appear and the skip function will be cancelled.

- 4 Press the **OSP** button to exit.

To cancel channel skipping

Follow steps 1) to 4) above.

Satellite stations	GUIDE	Channel on your satellite receiver	
		*A	*B
3 SAT	118		
PRO 7	120		
TELE 5	121		
TELECLUB	122		
UK GOLD	123	11	23
DISCOVERY	124	9	41
BRAVO / ADULT CHANNEL	125	8	42
CNN	126	15	28
EURONEWS	127		
THE LEARNING CHANNEL	128		
QVC	129	12	38
UK LIVING	130	13	34
RAI 1	131		
RAI 2	132		
TV5 EUROPE	133		
TVE INTERNATIONAL	134		
MBC/ARABIC	135		
VTM	136		
SPORTNET	137		
VIDEO HITS ONE	138		
SKY SPORT 2	140		
SUPERCHANNEL	144		
JAPAN TV	145	18	24
RTL-5	146		
FILMNET MOVIES	147		
T.N.T./CARTOON NETWORK	149	17	37

*A is typical SKY order. *B is ASTRA TRANSPONDER order.

ALL-IN-ONE Operation

This function lets you make a set of basic operations on both the VTR and the TV by simply pressing a button.

Preparation

- Make your TV compatible with this VTR. (See "MULTI BRAND REMOTE CONTROLLER" on page 11.)
- Locate the VTR and the TV as close as possible so both units can receive the infrared signals from the remote controller.
- Be sure to load a cassette on the VTR.

By pressing a button, the VTR and the TV work as below.

ON/PLAY 	TV: Turns on. When you have connected the VTR to your TV only by an aerial cable, set your TV to the video channel (page 9). VTR: Turns on and starts playback.	15
SHUT OFF 	TV: Turns off. VTR: Rewinds the tape to the beginning and then turns off.	16
PROG.SCREEN 	TV: Turns on. When you have connected the VTR to your TV only by an aerial cable, set your TV to the video channel (page 9). VTR: Turns on and displays a screen for Video Plus+ programming.	34

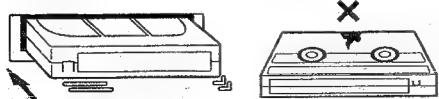
Notes

- This function is not available when the VTR is in the timer programme recording standby mode.
- Depending on TVs, this function may not be applicable for them even if they are compatible with this VTR.

Video Cassette Use

■ Loading a Cassette

Push the cassette into the cassette compartment with the window side facing up and the label side towards the front. The VTR is automatically turned on. The  indicator will appear in the VTR display.



F

■ Ejecting a Cassette

Press the **EJECT** button. The cassette is ejected from the cassette compartment.

D

11

Warning

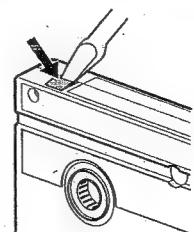
Do not insert your hands or any foreign objects into the compartment. This may result in injury or damage. Take special care with children to avoid accidents.

Precautions When Using Video Cassettes

Video cassettes have a safety tab to prevent accidental erasure. If the tab has been removed, recording cannot be performed.

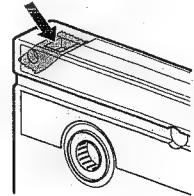
■ To prevent accidental erasure

Remove this safety tab with a screwdriver.



■ To record again

Cover the tab-hole with adhesive tape.



- Avoid exposing cassettes to direct sunlight. Keep them away from heaters. Avoid extreme humidity, vibrations or shock, strong magnetic fields (near a motor, transformer or magnet) and dusty places.

The VTR tells you current operating modes on the TV screen.

Displays and Indicators on the Screen

Pressing the **DISPLAY** button makes the operating mode appear. If you press this button again, the indication goes off, leaving the counter indication on the screen. To turn it off, press the **DISPLAY** button once more.

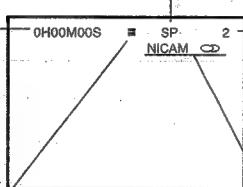
30

Counter indication

- Linear time counter
- Tape time remaining
- Clock

Each time the **COUNT** button is pressed, the indication changes.
(For details, see page 23.)

19



Recording tape speed (SP/LP/SLP)

Channel position number

The indicator varies with the operating mode.

Ejecting a tape	▲
Stop	■
Double speed playback	▶▶
Fast-forwarding	▶▶▶
Forward picture search	▶◀
Rewinding	◀◀
Reverse picture search	◀▶
Recording	●
Recording pause	●○
Playback	▶
Reverse playback	◀
Still picture	■
Frame advance	▶▶
Slow playback	▶▶▶
Reverse slow playback	◀◀◀

The indication varies with the receiving NICAM broadcasts.

NICAM broadcasts (See page 24.)	
NICAM Stereo or Mono	NICAM ○
NICAM Bilingual sound (Not yet used in U.K.)	NICAM I/II
Normal TV programme (Standard mono)	not lit

In addition to the indication above, the VTR may display other indicators such as index search. See respective pages for each explanation.

This section explains the basic playback operation.

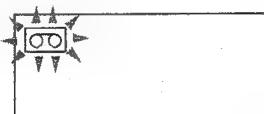
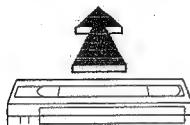
Basic Playback

Preparation

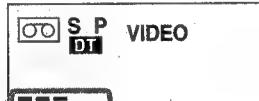
- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".

1

1 Load a recorded cassette. Power is turned on. If the cassette has no safety tab, playback starts automatically.



2 Press the **PLAY** button to start playback.



27

M

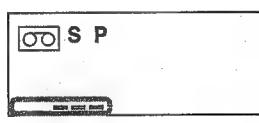
3 To stop playback, press the **STOP** button.



29

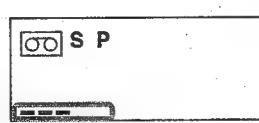
N

■ To rewind, press the **REW** button in the stop mode.



9

■ To fast-forward, press the **FF** button in the stop mode.



28

Note

TVs connected via SCART cables normally select the video input mode automatically when the **PLAY** button is pressed.

Playback and recording with the LP tape speed

When playing back a tape that has been recorded on another VTR, it may happen that the picture colour disappears, the picture becomes unstable and that noise occurs. It is therefore recommended that tapes that have been recorded on this VTR also are played back on this VTR.

Adjusting the Tracking

■ Digital Auto Tracking

When playback starts, the VTR automatically adjusts the tracking for clear pictures and sound. The "DT" indicator blinks during the adjusting.



Notes

- During the adjusting, the playback picture and sound may be distorted.
- The digital auto tracking is activated only in the playback mode.

■ Adjusting the tracking manually

If the VTR cannot locate the best possible tracking point, hold down one of the **CH/TRK** buttons until you obtain the best possible picture and sound.



20

B

Notes

- To reset the tracking point to the center, press both the **CH/TRK** buttons simultaneously.
- To resume the digital auto tracking, hold down both the CHANNEL buttons on the VTR simultaneously for about 2 seconds.
- The noise on the screen may not be completely eliminated depending on the tape used, especially when the tape was recorded on another VTR.

Hi-Fi and Normal Audio System

This unit's Hi-Fi stereo audio track (2-channel) can be used to playback an excellent Hi-Fi sound. Sound that has been recorded on the normal audio track is compatible with conventional VTR's.

When playing back a Hi-Fi recorded tape, press the **A.SELECT** button to select desired sound output.

The **L**, **R** indicators in the VTR display tell you what kind of sound output you are selecting. Accordingly, you can select the desired sound output while observing the lit and/or unlit indicators. (See page 24, "Monitoring Sound Output".)

13

B

Audio Mix Function

The VTR can output sounds, mixing one on the Hi-Fi stereo audio tracks and one on the normal audio track.

This function enables you, for example, to record your voice on a Hi-Fi recorded tape ("Audio Dubbing", page 35).

Press the **A.SELECT** button several times to make "MIX" appear in the VTR display.

13



MIX

L

R

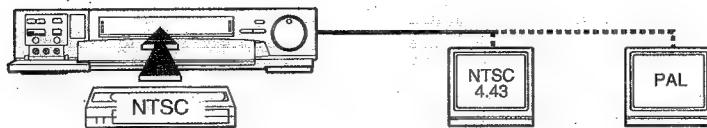
NTSC-RECORDED TAPE PLAYBACK

This VTR can play back an NTSC-recorded tape. You can watch the playback picture on a PAL system TV or an NTSC 4.43 system TV.

Setting for NTSC Playback

When you play back an NTSC-recorded tape on this VTR, make a setting on the SET UP screen according to your TV.

NTSC Tape: tapes on which NTSC M system broadcasts mainly broadcast in the U.S. and Japan are recorded, and tapes recorded in the NTSC video system which are commercially available on the market.

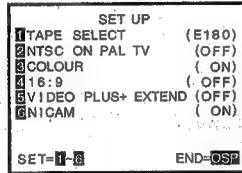


Multi System TV (NTSC 4.43 compatible)

1 Press the **OSP** button to display the MENU screen. 23

2 Press **number button 3** to select "VTR SET UP". 4

3 Set "NTSC ON PAL TV" to "OFF" by pressing **number button 2**. 4



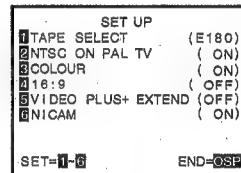
4 Press the **OSP** button twice to exit. 23

PAL System TV

1 Press the **OSP** button to display the MENU screen. 23

2 Press **number button 3** to select "VTR SET UP". 4

3 Set "NTSC ON PAL TV" to "ON" by pressing **number button 2**. 4



4 Press the **OSP** button twice to exit. 23

Notes

- NTSC Hi-Fi sound tracks cannot be reproduced. Sound of the tape is heard in monaural.
- With this VTR, an NTSC tape recorded in the SLP or LP tape speed can be played back. But there are some points to be observed.
 - The quality of the playback picture and sound are not clear.
 - Variable speed playback (picture search, still, slow playback, etc.) can't be performed properly.
 - Digital auto tracking may not be performed properly.

Notes for Using a PAL TV for NTSC Playback

- Use a TV compatible with PAL video signals of PAL 60 (525 lines).

When the TV, that is not compatible with PAL video signals of PAL 60, is used (when the TV, that is compatible only with PAL video signals of PAL 50 (625 lines), is used) NTSC playback pictures may roll up and down. This is not malfunction of the VTR or the TV. If your TV is equipped with a V-HOLD control, it may be possible to stop the rolling of pictures by adjusting this control.

About PAL 50 and PAL 60 of PAL video signals:

PAL 50 : is a normal signal and its PAL video signal is 50 fields (625 lines).

PAL 60 : is a special signal and its PAL video signal is 60 fields (525 lines).

Some TVs operate properly only with PAL 50 signals, some TVs operate properly with both PAL 50 and 60 signals.

Therefore, if your TV is switchable between PAL 50 (625 lines)/PAL 60 (525 lines), you can view an NTSC recorded tape in the PAL colour system with your own TV.

- Depending on the TV used, the picture may shrink vertically and black bars may appear both at the top and bottom of the TV screen. This is not an indication of malfunction.
- Variable speed playback (picture search, still, slow playback, etc.) may produce a skewed image and quite a bit of noise on the picture.
- If the tape pre-recorded in the SP tape speed mode is played back in the picture search mode, the picture may be reproduced with no colour.

Note

For viewing an NTSC-recorded tape, we recommend using an NTSC 4.43 TV.

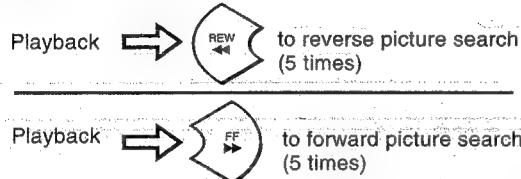
VARIABLE SPEED PLAYBACK

You can play back a tape at various tape speeds.

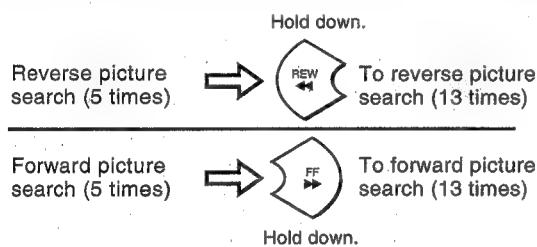
Picture Search

You can locate a particular scene while viewing a playback picture in the fast-forwarding or rewinding mode.

1 During playback, press the **REW** or **FF** button. The tape runs at 5 times the normal playback speed.



2 If you continue to press and hold the **REW** or **FF** button, the search speed increases.



When you release the button, the speed returns to 5 times.

3 To resume normal playback, press the **PLAY** button.



Notes

- The picture will have some interference. This is not a defect in the unit.
- If you play back a tape recorded in the LP tape speed or recorded on another VTR in various speed mode, the picture may be noisy or monochrome.
- If you press the **REW** or **FF** button while rewinding or fast-forwarding the tape, the VTR enters the picture search mode.
- If you press the **REW** or **FF** button while picture searching, the VTR enters the rewinding or fast-forwarding mode, respectively.

9
28

Still Picture

You can freeze a picture to watch closer.

1 During playback, press the **PAUSE/STILL** button.

The picture freezes.



2 To resume playback, press the **PAUSE/STILL** button again.



The still mode is automatically cancelled after about 5 minutes and returns to normal playback.

Notes

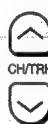
- The still picture may shake if a picture of a fast-moving object or scene is frozen. This is not a defect in the unit.
- If you play back a tape recorded in the LP tape speed or recorded on another VTR in various speed mode, the picture may be noisy or monochrome.
- If noises appear in the still picture, adjust the tracking manually in the slow-motion mode. (See next page.)

26
G

Adjusting Still Picture Stability

If the still picture is distorted or flickers, hold down one of the **CH/TRK** buttons until the picture becomes stable.

20



Note

The distortion of the still picture may not be eliminated completely.

9
28
9
28

Frame Advance

You can advance the picture frame by frame.

1 During playback, press the **PAUSE/STILL** button.



2 Press the **PLAY** button.

Each time you press the button, the picture advances one frame.

While the button is held down, the tape runs at 1/25th the normal playback speed.

3 To resume normal playback, press the **PAUSE/STILL** button.

26
G

27
M

26
G

Slow-motion Picture

You can playback at 1/6th or 1/12th the normal playback speed.

1 During playback, press the **SLOW** button. The tape will run at about 1/6th the normal playback speed.



2 If you press the **SLOW** button again, the speed changes to 1/12th. Each time you press the button, the speed changes between 1/6 and 1/12.

3 To resume normal playback, press the **PLAY** button.

The slow-motion picture mode will be cancelled automatically after approximately 5 minutes to shift to the normal playback mode.

Note

The slow-motion picture may flicker up and down. This is not a defect in the unit.

8

8

27
M

Adjusting the Tracking Manually

If the slow-motion picture is noisy, hold down one of the **CH/TRK** buttons until the best picture is obtained.

20



Note

The noise in the slow-motion picture may not be eliminated completely by the tracking adjustment.

JOG Dial/SHUTTLE Ring Operation

You can also play back a tape at various speeds by turning the **JOG** dial or the **SHUTTLE** ring on the VTR.

O

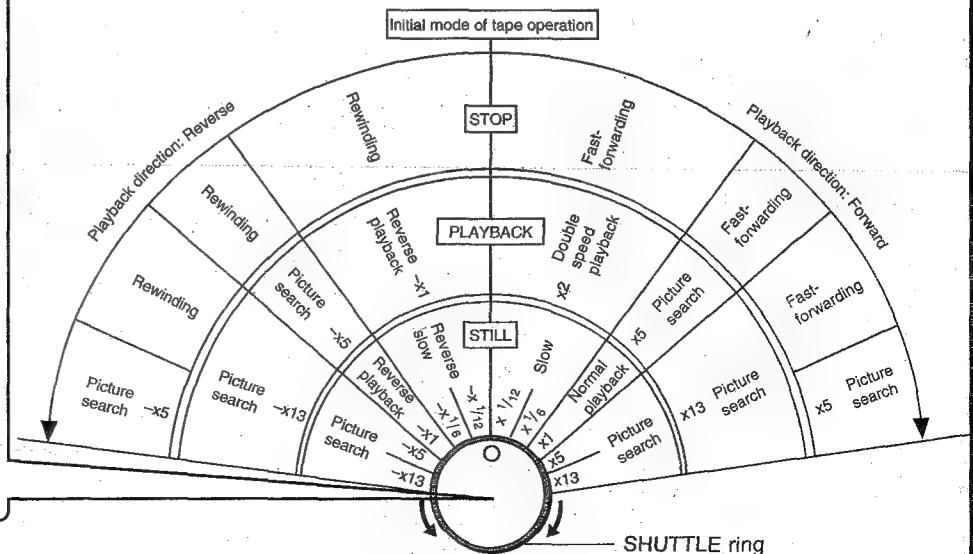
	Slow playback	Picture search	Accelerated picture search
PAL(SP)	1/12	1/6	x5
PAL (LP)	1/12	1/6	x5
NTSC (SP)	1/15	1/7	x5
NTSC (SLP)	1/15	1/7	x27

Using the JOG dial



- 1 While in playback, press the **PAUSE/STILL** button on the VTR to light it up.
- 2 Turn the JOG dial clockwise or counterclockwise. Frame advance is obtained according to the speed you turn the dial. When you stop the dial, a still picture is obtained.

- To cancel the JOG dial mode, press the **PAUSE/STILL** button to turn it off.



Notes

- The reverse slow playback mode will be released automatically after about 1 minute and forward playback will start.
- The reverse playback mode will be released automatically after about 5 minutes and forward playback will start.
- Fast-forwarding or rewinding started from the stop mode continues even if the SHUTTLE ring is released. To stop, press the **STOP** button.

N

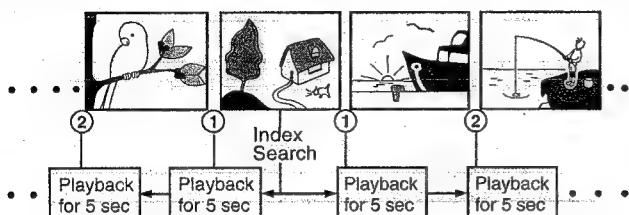
29

You can easily locate the desired programme using the index signal registered on the tape.

About This Function

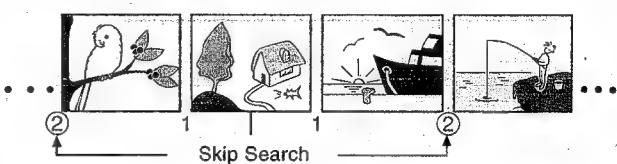
Index Search

The VTR plays back each programme with an index signal for about 5 seconds.



Skip Search

The VTR finds and plays back a programme with an index signal you specified.



To use this function, index signals have to be registered on your tape. For registering index signals, follow the procedure below.

Registering Index Signals

■ Registering index signals automatically

An index signal is automatically registered when a recording starts.

Notes

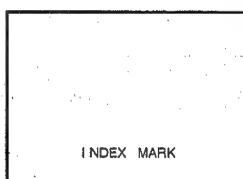
- An index signal is not registered when the VTR is in the recording pause mode and recording restarts.
- An index signal is also registered when a timer programme recording starts.

■ Registering index signals manually

Index signals can be manually registered at desired points on the tape **during recording**.

Press the INDEX (+) button at a desired point.

6



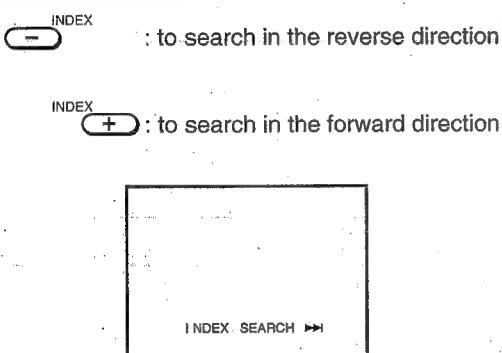
Note

When registering two or more index signals, certain intervals are required: more than 1 minute in the SP tape speed and more than 2 minutes in the LP tape speed.

Index Search

This function plays back the tape for about 5 seconds at each index signal.

- 1 Load a cassette with the index signals registered.
- 2 Press the **INDEX (-)** or **(+)** button in the stop or playback mode.



The VTR fast-forwards or rewinds the tape. When an index signal is found, the VTR plays back the tape for about 5 seconds, and then resumes fast-forwarding or rewinding. This is repeated each time at an index signal.

3 Press the **PLAY** button when the desired programme is found.
Normal playback starts.



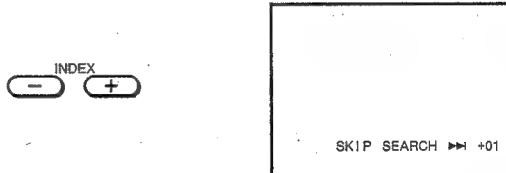
Notes

- At the very beginning of the tape, the index search function may not work properly.
- If you registered the index signals on a tape recorded on another VTR, the recording may be blurred at the index point and the index search may not work properly.

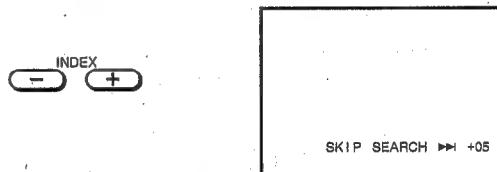
Skip Search

This function fast-forwards or rewinds the tape to the point at which the selected index signal is registered, and starts playback from there.

- 1 Load a cassette with the index signals registered.
- 2 Press the **INDEX** (-) or (+) button twice in the stop or playback mode.



3 Press the **INDEX** (-) or (+) button depending on the direction where your desired programme is located.
Each time you press the (-) or (+) button, the number decreases or increases respectively.

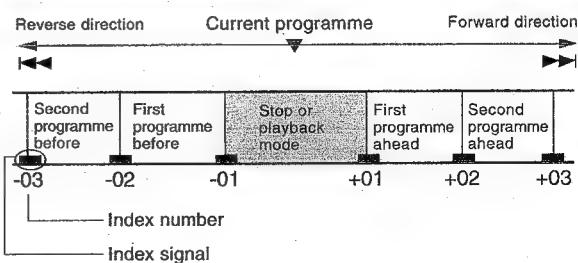


The VTR starts to search for the point you specified with the (-) or (+) button. When the point is found, playback will start automatically.

Notes

- You can set an index number up to ± 20 .
- The skip search is cancelled when the PLAY or STOP button is pressed.

Locating the Index Number



[Example]

- To locate the beginning of first programme before, press the **INDEX (-)** button three times to set the index number -02.
- To locate the beginning of next programme ahead, press the **INDEX (+)** button twice to set the index number +01.

These functions will help your playback.

Counter Function

You can view the clock, linear time counter or tape remaining time in the VTR display or on the TV screen.

Preparation

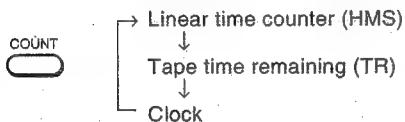
Set the VTR/TV selector to "VTR".

1

Counter Displays

Each time you press the COUNT button, the VTR display changes in sequence as follows:

19



The indication above will also appear on the TV screen by pressing the DISPLAY button. They are switchable with the COUNT button.

30
19

To reset the linear time counter to "0H00M00S"

The counter is automatically reset to "0H00M00S" when a cassette is ejected. If you want to reset at another point, such as the beginning of a new recording, just press the COUNTER RESET button.

18

Notes

- The linear time counter does not work on non-recorded portions on the tape.
- When the tape is ejected or the VTR is turned off, the display changes to clock.
- If the tape rewinds back over "0H00M00S", "—" appears in the VTR display.
- The displayed time of the linear time counter is only an approximation.

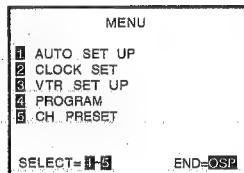
Tape Time Remaining

1 Turn on the VTR and load a cassette.

F

2 Press the OSP button to display the MENU screen.

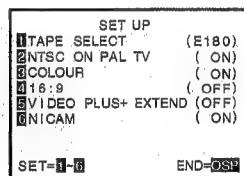
23



3 Press number button 3 to select "VTR SET UP".

4

3



4 Press number button 1 to select the tape length to be used.

4

1

- E180: for an E-195 tape or shorter
- E240: for an E-210 or E240 tape
- E260: for an E-260 tape
- E300: for an E-300 tape

5 Press the OSP button twice to exit.

23

6 Press the COUNT button.
The tape time remaining indicator appears.

19



Notes

- The displayed remaining time is only an approximation.
- The time remaining is calculated according to the tape speed (SP, LP or SLP) and the cassette type.
- It is necessary to set the tape length correctly beforehand in step 4 when you use the time remaining display.

This VTR incorporates a special decoder that can receive NICAM broadcast programmes.

NICAM Broadcast Programme

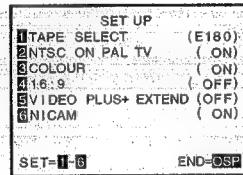
NICAM programmes are divided into 3 types. NICAM Stereo, NICAM Mono and Bilingual (transmission in another language). NICAM programmes are always accompanied by a standard mono sound broadcast and you can select the desired sound on the screen (for recording) or with the A.SELECT button (for playback).

NICAM Broadcast Setting

1 Press the OSP button to display the MENU screen. 23

2 Press number button 3 to select "VTR SET UP". 4

3 Press number button 6 to set "NICAM" to "ON". 4



ON: Normally set at this position.

OFF: Only set at this position to record the standard mono sound during a NICAM broadcast if the stereo sound is distorted due to inferior reception conditions.

4 Press the OSP button twice to exit. 23

Monitoring Sound Output

When monitoring a TV programme or playing back a Hi-Fi recorded video tape, press the A.SELECT button to select a desired sound output. As the A.SELECT button is pressed, the sound output and the indicator change as below:

VTR display	Sound type	Stereo sound	Bilingual sound	Standard sound broadcast
	Heard in stereo. (left channel and right channel).		Channel I (MAIN) heard from the left speaker, Channel II (SUB) from the right speaker.	Heard in monaural.
	Left channel heard from both the left and right speakers.		Channel I (MAIN) heard from both the left and right speakers.	Heard in monaural.
	Right channel heard from both the left and right speakers.		Channel II (SUB) heard from both the left and right speakers.	Heard in monaural.
	Both and go off.	Heard in monaural.	Channel I (MAIN) heard from both the left and right speakers.	Heard in monaural.
	MIX		Sound mixed the left and right channel, and the normal audio track.	

Sounds of a recorded TV programme

This VTR is capable of recording sound in Hi-Fi system. Stereo broadcasts and bilingual sound broadcasts are recorded in its original sound system regardless of the setting. (See the list above.)

Notes

- When listening to a stereo broadcast or playing back a Hi-Fi tape recorded in stereo, you have to connect the VTR with the stereo audio system or the stereo TV with a SCART cable. The sound which is output from the AERIAL OUTPUT socket is monaural.
- If a tape which is not Hi-Fi recorded is played back, and indicators go off automatically and the sound output is monaural.

RECORDING A TV PROGRAMME

This section explains the basic recording operation.

Basic Recording

Preparation

- Turn on the VTR.
- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".

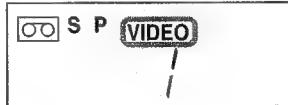
1

1 Load a cassette with the safety tab attached.

F

2 Press the **TV/VIDEO** button so that the "VIDEO" indicator appears in the VTR display.

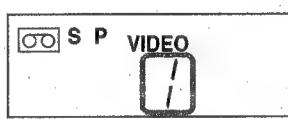
2



3 Select the TV programme (position number) to record with the **CHANNEL** buttons on the VTR, or the **CH/TRK** buttons or **number buttons** on the remote controller.

B

20

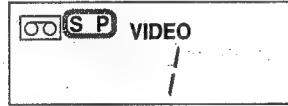


If "L1", "L2" or "SA" is displayed in the VTR display, press the **INPUT SELECT** button so that the position number appears.

3

4 Press the **SP/LP** button to select the recording tape speed.

12



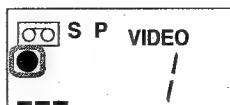
SP: Suitable for general recording with better picture and sound quality.

LP: Suitable for doubling recording time, but with less picture and sound quality than using the SP tape speed.

5 Press the **REC** button on the VTR, or simultaneously press the two **REC** buttons on the remote controller. Recording starts.

C

7



6 Press the **STOP** button to stop recording.

29

N

Watching a TV Programme While Recording Another

1 While recording, press the **TV/VIDEO** button so that the "VIDEO" indicator if displayed disappears in the VTR display.

2

2 Choose another channel using the channel selector on the TV.

2

Note

To monitor the programme which is being recorded, press the **TV/VIDEO** button so that the "VIDEO" indicator will appear in the VTR display. Select the video channel or video input mode on the TV.

Skipping Unnecessary Scenes While Recording

Press the **PAUSE/STILL** button to stop recording momentarily. To resume recording, press the **PAUSE/STILL** button again.

26

G

Note

The VTR automatically shifts to the stop mode if the recording pause mode continues for 10 minutes.

One-touch Timer Recording

C

While recording, you can set the off time.

Press the **REC** button on the VTR to set the off time. Each time you press the button, it changes the VTR display as follows:

Example



Press REC

once

twice

three times

:

eight times

nine times

Recording off time

the next hour or half hour

1 hour

1 hour 30 min.

4 hours

One-touch Timer Recording
cancelled (---)

By setting the recording off time, the recording stops and the VTR is turned off automatically.

Notes

- To cancel the one-touch timer recording in progress, press the **STOP** button.
- To delay the recording off time, further press the **REC** button on the VTR.
- If the VTR clock is not set, the one-touch timer recording will not activate.

N

C

RECORDING FROM A SATELLITE RECEIVER

If you are using a satellite receiver, you can connect it to this VTR to record a satellite programme.

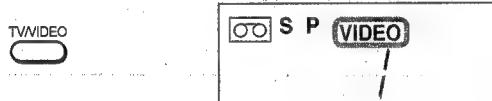
Recording Procedure

Preparation

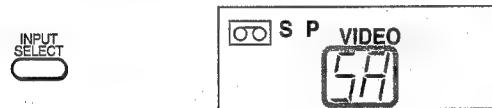
- Turn on the VTR.
- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".
- Make sure your satellite receiver is connected to the VTR correctly using a SCART cable (page 10), and turn it on.

1 Load a cassette with the safety tab attached.

2 Press the **TV/VIDEO** button so that the "VIDEO" indicator appears in the VTR display.



3 Press the **INPUT SELECT** button so that "SA" indicator appears in the VTR display.



Each time you press the **INPUT SELECT** button, the display changes as follows.

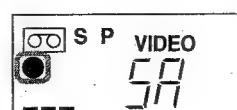
→ TV (position number) → L1 → L2 → SA (satellite)

4 Select the desired satellite channel on the connected satellite receiver. Make sure that the selected channel is on the TV.

5 Press the **SP/LP** button to select the recording tape speed.



6 Press the **REC** button on the VTR, or simultaneously press the two **REC** buttons on the remote controller. Recording starts.



7 Press the **STOP** button to stop recording.

1

F

2

3

12

C

7

29

N

Satellite Monitor Function

You can watch a satellite programme from your connected satellite receiver even while the VTR is recording a TV programme, or is in the playback or stop mode.

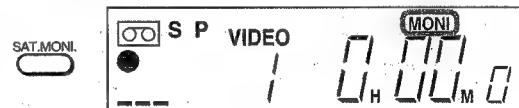
Important

This function only applies when the TV and the satellite receiver are connected to the VTR using the SCART socket.

■ Watching a satellite programme while recording a TV programme

1) While recording a TV programme, press the **SAT.MONI.** button.

The "MONI" indicator appears.



Each time you press the **SAT.MONI.** button, the indicator goes on or off.

2) Choose a desired satellite channel on the connected satellite receiver.

■ Watching a satellite programme while the VTR is in the playback or stop mode

1) Press the **SAT.MONI.** button so that the "MONI" indicator appears in the VTR display.

2) Press the **TV/VIDEO** button so that the "VIDEO" indicator appears in the VTR display.

3) Choose a desired satellite channel on the connected satellite receiver.

Notes

- If you make the on-screen display (ex. MENU screen) appear on the TV, this function is cancelled.
- The satellite monitor function is also available in the timer programme recording mode (page 27) or the one-touch timer recording mode (page 25).

■ Watching a TV programme while recording a satellite programme

1) While recording a satellite programme, press the **TV/VIDEO** button so that the "VIDEO" indicator disappears in the VTR display.

2) Choose a desired TV channel on the TV.

TIMER PROGRAMME RECORDING

The programmable timer allows you to record up to 6 different programmes over one month.

Timer Programming Procedure

Preparation

- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".
- Turn on the VTR.
- Make sure that the clock is set correctly. (See page 12.)

1

Example

To record a programme of a station stored on position number 1 (e.g. BBC1) in the SP tape speed from 21:30 until 22:00 on August 30. Today is August 25.

1 Load a cassette with the safety tab attached.

F

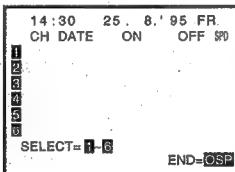
2 Press the OSP button to display the MENU screen.

23

3 Press number button 4 to select "PROGRAM".

4

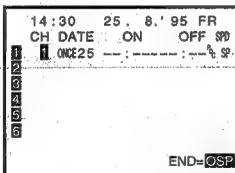
④



4 Select programme number 1.

4

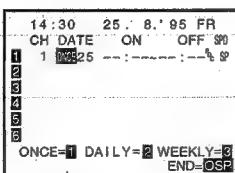
①



5 To select position number 1, press number button 0 and 1.

4

① → ①



- If you record from the connected external equipment, make "L1", "L2" or "SA" appear by pressing the INPUT SELECT button as follows:
 - L1: Via the AUDIO/VIDEO (SCART) socket on the rear panel.
 - L2: Via the LINE IN 2 jacks on the front panel.
 - SA: From the satellite receiver connected to the SATELLITE (SCART) socket on the rear panel.

3

- If you press the SAT.CONT. button, the VTR enters the satellite control mode and [SA] is displayed. Enter a desired satellite channel number. For details, see page 29.

33

SAT.CONT. → Ex. ① → ⑧

To make corrections:

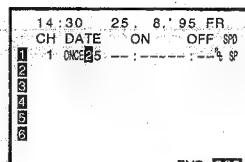
Press the SHIFT (←) button to move back to the item, or the SHIFT (→) button to move forward.

22

6 Select a one-time recording.

4

①

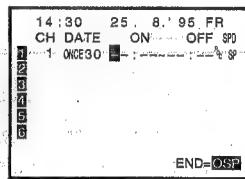


You can also set daily or weekly timer programme recordings. (See next page.)

7 Set the recording date.

4

③ → ①

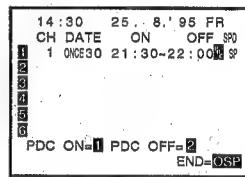


8 Set the recording start time and the off time.

4

② → ① → ③ → ①

② → ② → ① → ①



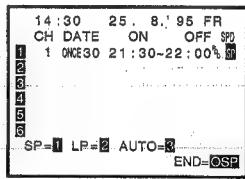
9 To set PDC, press number button 1; if not set, press number button 2.

4

If you have set the VTR to the satellite receiver control mode ([SA] displayed) in step 5, PDC cannot be set.

(For PDC, see next page.)

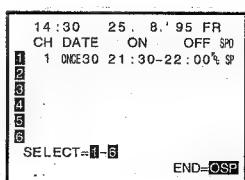
①



10 Select the tape speed (SP).

4

①



(For the tape speed "AUTO", see next page.)

When you set PDC in step 9, "AUTO" cannot be chosen. Use either PDC or AUTO speed.

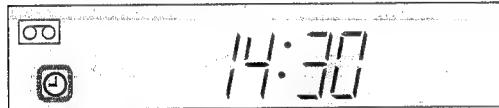
To set another programme, follow steps 4 to 10. In step 4, select next programme number.

11 Press the **OSP** button.
Now programming is complete.

12 Press the two **TIMER** buttons simultaneously.



The power turns off and the VTR enters the timer standby mode.



Daily and Weekly Recording

Daily recording

You can record TV programmes on the same channel at the same time Monday through Friday. Press **number button 2** for "DAILY" in step 6.

23

25

Weekly recording

You can record TV programmes on the same channel on the same day and time every week. Press **number button 3** for "WEEKLY", then **number button 1** to 7 to select a day of the week in step 6.

4

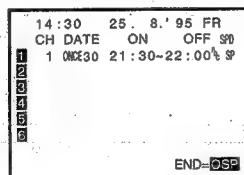
4

Confirming the Timer Programmes (During the Timer Programme Recording)

Press the **OSP** button.

The screen for confirming will appear.

23



After about 30 seconds, the screen disappears.

Changing/Cancelling the Timer Programmes

1) If the indicator is lit, press the two **TIMER** buttons to turn it off, and then turn the VTR on by pressing the **ON/STANDBY** button.

25

17

2) With steps 2 to 11, change the items.
• To cancel a programme, select the programme number you want to cancel in step 4, and press the **CANCEL** button. The line is then cleared.

24

3) Press the two **TIMER** buttons to return to the timer standby mode.

25

Recording or Playback in the Timer Standby Mode

First press the two **TIMER** buttons to release the timer standby mode, and then press the **ON/STANDBY** button to turn on the VTR. The VTR will be available for use.

25

17

- Be sure to press the two **TIMER** buttons again to return the VTR to the timer standby mode after you have finished.

25

Auto Speed Adjust

If you are not sure if the tape is long enough for timer programme recording in the SP tape speed, set the recording tape speed to "AUTO". Recording starts in the SP tape speed and the VTR automatically selects the tape speed to record the programme to the end. If the tape length is not long enough, the tape speed automatically changes from SP to LP.

Notes

- It is necessary to select the tape length beforehand on the **SET UP** screen. (See page 23, "Tape Time Remaining".)
- When the LP tape speed is selected and the tape length is not sufficient to record the programme to the end, the programme cannot be completely recorded.
- The picture will be distorted when playing the part where the VTR switched the recording speed from SP to LP.

PDC (Programme Delivery Control System)

Depending on TV stations, PDC signals are transmitted with TV programmes. The VTR can control the timer recording start and end times by the PDC signals to assure the recording of a whole programme, covering any changes in the published broadcast time, that is, time shift, extension or interruption of the programme. If the TV programme is interrupted during the PDC controlled timer recording, the recording will be automatically interrupted and resumed when the programme continues.

Important

The PDC function only works when the PDC signal is transmitted with the TV programme to be recorded. If the broadcasting station does not transmit the PDC signal, the timer recording will be done in the normal mode even if it was programmed in the PDC mode.

Note

If a programme with PDC is entered using Video Plus+, do not change the recording start time.

Error Indication

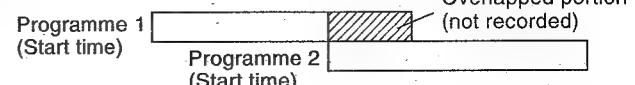
- The "E" (Error) indicator appears in the VTR display if you press the **TIMER** buttons when:
 - a cassette is not loaded.
 - the loaded cassette has no safety tab.
 - no timer programme is set.
 In these cases, a recording can not be made.

If a power failure occurs during the timer programme recording

- If the indicator is missing in the VTR display after the power failure, the programmed contents have been cleared. Reset the timer programming.
- When power has failed for a short time, the colon of the current time display blinks. The programmed contents are not affected. Reset the clock.

Overlaps of the programmes

If two timer programmes overlap, the recording start time of programme 2 has priority over the recording off time of programme 1.



Overlapped portion

(not recorded)

Your satellite channels can be selected or changed on this VTR via the connected satellite receiver, same as TV channels.

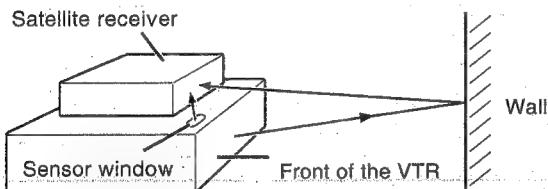
Setting to Control Satellite Channels

You can select satellite channels by operating this VTR.

It is also possible to automatically change the satellite channels according to your programme setting in the timer programme recording (page 27).

Important

Put the satellite receiver on the top of the VTR as shown below. Do not block the sensor window.



The infrared signals come out of the sensor window and the front of the VTR. Then they bounce off walls and other objects in the room and are received by the satellite receiver. The VTR sends out infrared signals to your satellite receiver even during timer programme recording.

Note

If the channels cannot be controlled properly because the infrared signal fails to reach the satellite receiver, change the position of the satellite receiver on the VTR so that it can receive the signal.

Preparation

- Keep the connected satellite receiver turned on.
- Make sure your satellite receiver is connected to the VTR correctly. (See page 10.)
- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".

1

1 Press the OSP button to display the MENU screen.

23

2 Press number button 5 to select "CH PRESET".

4

5

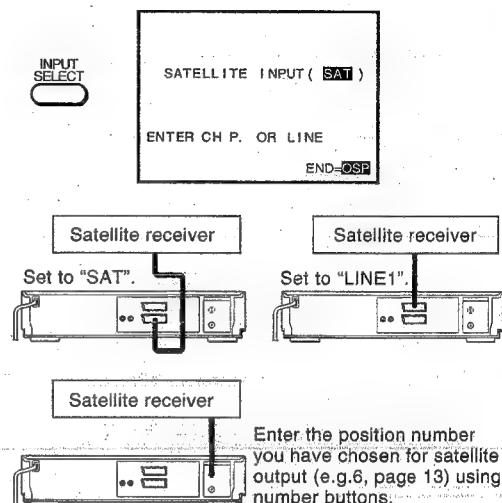


4

3 Press number button 4 to select "SATELLITE SETTING".

4

Set the position number or line input mode using the INPUT SELECT button depending on your satellite receiver connection.



5

Press the OSP button.

23

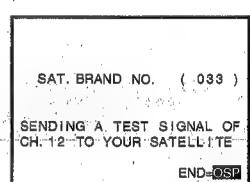
6

Enter three figures of the brand code for your satellite receiver by number buttons. Check the brand code list (page 30).

4

Ex. To enter brand code 33.

0 → 3 → 3



When you enter the brand code, the VTR sends a test signal to the satellite receiver to make sure that the brand code has been entered correctly. The signal will set the satellite channel to 12. If channel 12 is displayed on your satellite receiver, it means the brand code is set correctly. Several codes may be allocated to one brand. Enter one after the other until the channel shows 12.

7

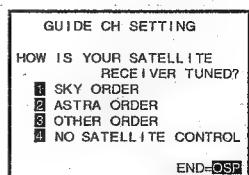
Press the OSP button.

23

8

Select 1 to 4 using number buttons as below depending on your satellite receiver.

4

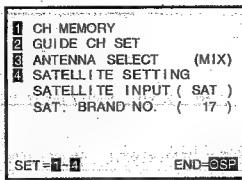


Select . . .

- 1: If the channel of SKY ONE is 1. Refer to the "GUIDE Channel Table" (page 14).
- 2: If the channel of SKY ONE is 8.
- 3: If the order is personal choice.
- 4: If your satellite receiver did not change to channel 12 in step 6.

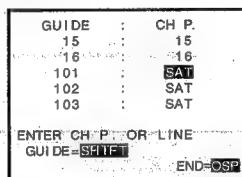
(Continued)

If 1, 2 or 4 is selected, the screen changes as right after a few seconds.



→ Proceed to step 9.

If you selected 3, the screen changes as below. It is necessary to make the setting of the GUIDE channels on this screen. Follow steps from 4 on page 32 to set "CH.P." column for all your satellite channels.



→ After having done the GUIDE channel setting, proceed to step 9.

9 Press the OSP button twice to exit.

23

Controlling Satellite Channels

Using the remote controller of this VTR

1) Press the SAT.CONT. button to make "SAT" appear in the VTR display.

33

2) Select a desired satellite channel using number buttons.

4

21

Way of use may differ. Check how they work on your satellite receiver.

Ex. To select channel 3: To select channel 16:
 • 0→3 • 1→6
 • 0→3→ENTER • 1→6→ENTER
 • ENTER→3 • ENTER→ENTER→1→6

Important

Some satellite receivers may not respond to all the operations above, or may not be operated at all with this remote controller. In this case, operate your satellite receiver with its own remote controller.

Notes

- Each time the SAT.CONT. button is pressed, this function goes on or off.
- To make a position number appear in the VTR display after you have cancelled this function, press the INPUT SELECT button.

33

3

Changing satellite channels automatically in the timer programme recording

See "TIMER PROGRAMME RECORDING" on page 27. Go through steps 1) and 2) above beforehand and confirm that channels are properly selected.

Note

Keep the satellite receiver turned on even while the VTR is in the timer programme recording.

Table of Satellite Receiver Brand Codes

Brand name	Brand code
TOSHIBA	17, 33
ALBA	1, 2, 9, 16, 17, 65, 66
AMSTRAD	3, 4, 5, 17, 55, 56, 76, 77, 89, 90, 91, 124
ARMSTRONG	17, 43
BIG BROTHER	7, 8, 17
BT	17, 122, 123
BUSH	2, 9, 16, 17, 65, 66
CABLE STAR	17, 101, 102, 103, 104
CABLETIME	17, 101, 102, 103, 104
CAMBRIDGE	17, 122, 123
CHANNEL MASTER	2, 3, 10, 17
D2MAC DECODER	17, 72
DRAKE	17, 45
ECHOSTAR	13, 14, 17, 92, 93, 94
FERGUSON	9, 15, 16, 17, 23, 38, 39, 59, 108
GRUNDIG	17, 19, 28, 71, 125
ITT/NOKIA	17, 26, 27, 50, 51, 52
JVC	17, 122, 123
LENCO	17, 49
MASPRO	17, 20, 64, 67
MATSUI	17, 125
NEC	17, 22, 57
NETWORK	9, 16, 17
NORDMENDE	17
PACE	9, 16, 17, 23, 38
PANASONIC	17, 61
PHILIPS	16, 17, 24, 46, 73
REDIFFUSION	17, 25
REVOX	17, 21
SAKURA	17, 62, 63, 68
SALORA	17, 26, 27, 50, 51, 52
SAMSUNG	17, 36
SIEMENS	17, 23
SENTRA	10, 17
SONY	17, 30
TATUNG/NIKKO	17, 32, 54, 58, 80, 81
TEXSCAN	17, 119, 120
THOMSON	7, 17, 39
TRISTAR	17, 31
UNIDEN	17, 67
VIDEOTRON	17, 105, 106, 107, 108, 109, 110, 121
WISI	17, 35, 37, 44, 93

- For some brands, several brand codes are allocated.
- Some satellite receivers may not be operated at all with this VTR.

Video Plus+ SET-UP

Video Plus+ is a timer recording system for an easier programming that requires you only to enter a PlusCode assigned to a desired programme. This section explains the necessary set-up to make Video Plus+ recordings.

Information

You can perform timer recording very easily using the Video Plus+ programming system of this VTR. Before making a Video Plus+ recording, it is necessary to set GUIDE channels in the VTR.

Setting The Clock (page 12)

STORING STATIONS ON THE VTR (page 13)

CONTROL OF SATELLITE CHANNELS (page 29, 30)
(When using a satellite receiver)

- Satellite input setting
- Brand code setting
- GUIDE channel setting

GUIDE channels for satellite channels are automatically set when you choose SKY or ASTRA. If you correct the setting, or if your satellite receiver is not SKY or ASTRA, use the procedure explained in "Video Plus+ SET-UP".

Video Plus+ SET-UP (pages 31, 32)
(GUIDE Channel Setting)

- GUIDE Channel Setting for TV Channels
- GUIDE Channel Setting for Satellite Channels

Video Plus+ RECORDING (pages 33, 34)

GUIDE Channel Setting for TV Channels

Important

There is no need to perform this procedure if the TV stations have been stored to the position numbers (1 for BBC1, 2 for BBC2, 3 for ITV and 4 for CHANNEL 4) on the VTR (pages 13 and 14).

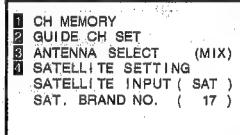
Preparation

- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".

1 Press the OSP button to display the MENU screen.

2 Press number button 5 to select "CH PRESET".

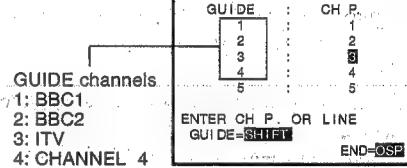
⑤



SET=1-1 END=OSP

3 Press number button 2 to select "GUIDE CH SET".

②



GUIDE channels 1 to 4 have been factory set to position numbers 1 to 4 respectively.

Make sure that the numbers are matched as above.

Note

To set another TV channel, select the GUIDE channel using the SHIFT button, and in the "CH P." column enter the position number in which you have stored the TV station by number buttons.

4 Press the OSP button three times to exit.
The GUIDE channel setting for TV channels is complete.

Now you can make a Video Plus+ recording of TV programmes.
(Skip to page 33.)

If you use a satellite receiver, make the GUIDE channel setting for satellite channels as well.
(See the next page.)

GUIDE Channel Setting for Satellite Channels (Using a Satellite Receiver)

The VTR generally does this setting during "Setting to Control Satellite Channels" procedure (pages 29 and 30). Use this procedure to correct the GUIDE channels or to make the GUIDE channel setting if your satellite receiver has a channel order other than SKY or ASTRA.

Preparation

- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".

1

Example To set a GUIDE channel 101 of SKY ONE.

1 Press the OSP button to display the MENU screen.

23

2 Press number button 5 to select "CH PRESET".

4

3 Press number button 2 to select "GUIDE CH SET".

4

(2)

GUIDE	CH P.
1	1
2	2
3	3
4	4
5	5

ENTER CH P. OR LINE
GUIDE=SHIFT END=OSP

4 Scroll the numbers to put 101 in the center position of the "GUIDE" column using the SHIFT button.

22

(→)
SHIFT
(←)

GUIDE	CH P.
15	15
16	16
101	1
102	2
103	3

ENTER SAT CHANNEL
GUIDE=SHIFT END=OSP

Refer to the chart you prepared (page 14).

Satellite stations	GUIDE	Channel on your satellite receiver	
		*A	*B
SKY ONE	101	1	8
SKY NEWS	102	2	12
SKY MOVIES	103	3	16
THE MOVIE CHANNEL	104	4	18
SKY SPORT	105	6	20
NICKELODEON / NICK AT NIGHT	106	7	46
EUROSPORT	107	16	4
GALA VISION	108		
MTV EUROPE			
	145		
	146		
FILMNET MOVIES	147		
T.N.T./CARTOON NETWORK	149	17	37

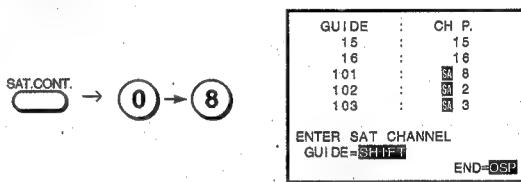
*A is typical SKY order. *B is ASTRA TRANSPONDER order.

5 Press the SAT. CONT. button ([SA] displayed), and enter a channel number on the satellite receiver using number buttons.

33

4

If SKY ONE is channel 8 on your satellite receiver channel selector...



6 To set GUIDE channels for other satellite channels, repeat steps 4 and 5.

7 Press the OSP button three times to exit.

23

Now you can make Video Plus+ recordings of satellite channels. (Proceed to page 33.)

RECORDING

Video Plus+ RECORDING

After performing the Video Plus+ set-up, you can easily programme a recording simply by entering the PlusCode. The numbers are published in the TV listings of newspapers, TV guide magazine, etc.

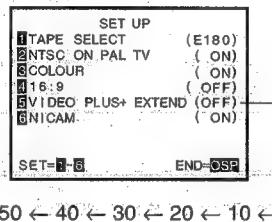
Setting Time Extension

Before making a Video Plus+ recording, set possible time extension for the recording to allow for programme's overrun. You can extend the recording time in 10 minute increments up to 60 minutes.

1) Press the OSP button to display the MENU screen. 23

2) Press number button 3 to select "VTR SET UP". 4

3) Press number button 5 repeatedly to set desired time extension. 4



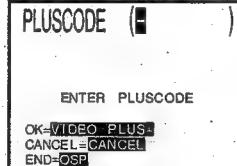
4) Press the OSP button twice to exit. 23

Notes

- Extend time should be set before starting Video Plus+ recording procedure.
- The time extending doesn't work on recording programmes already memorized.
- When you do not use time extension for Video Plus+ recording, set to "OFF" on the SET UP screen.

Video Plus+ Recording Procedure

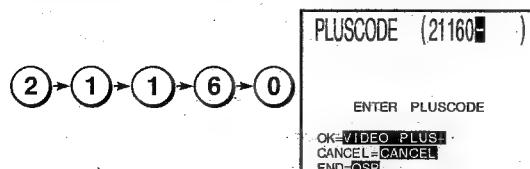
1) Press the VIDEOPLUS+ button. 5
The VTR enters the Video Plus+ mode.



2) Enter the PlusCode. 4

Example: To record a TV programme beginning at 21:30 on August 30, 1995 with PlusCode 21160 (fiction).

Press number button 2, 1, 1, 6 and 0.
Confirm that the entered number is correct. 24

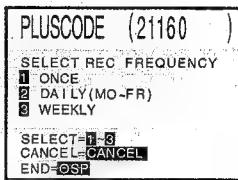


- To correct the number, clear all digits by pressing the CANCEL button and re-enter a number.

3) Press the VIDEOPLUS+ button. 5

The TV screen changes as follows:

(Some TV programmes may not require the selection on the screen below, and skip automatically to step 5 when its PlusCode is entered.)



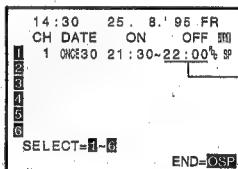
ONCE: One-time recording.

DAILY (MO-FR): Records TV programmes on the same TV channel at the same time Monday through Friday.

WEEKLY: Records TV programmes on the same TV channel at the same time on the same day every week.

4) To select "ONCE" for example, press number button 1. The "ONCE" programming has been made automatically.

Programme details are shown. 4



Ex. If you set 10 minutes time extension on the SET UP screen, the "OFF" displays 22:10.

5) If you use the PDC function, check to be sure "PDC" is displayed on the screen.

(For PDC, see page 28.)

"PDC" turns on or off each time you press the PDC button.

Note

Do not change the recording start time.

6) To change the tape speed, press the SP/LP button. (For "AUTO", see page 28.) 12

Note
If you set PDC in step 5, "AUTO" cannot be chosen. Use either PDC or AUTO tape speed.

7) Press the VIDEOPLUS+ button. 5

The programme setting is now memorized.



8) To enter another PlusCode, follow steps 2 to 7.

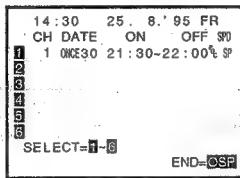
9) Finally press the two TIMER buttons simultaneously. The VTR enters the timer standby mode and the  indicator lights up. 25



Confirming the Video Plus+ Timer Programme

■ Before the VTR enters the timer standby mode (indicator not lit)

- 1) Press the **OSP** button to display the MENU screen. **23**
- 2) Press **number button 4** to select "PROGRAM". **4**

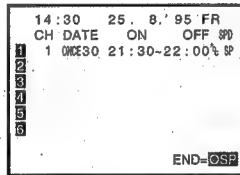


Check the programmed data.

- 3) Press the **OSP** button twice to exit. **23**

■ During the timer programme recording. (indicator lit)

Press the **OSP** button. **23**
The screen for confirming appears.



After about 30 seconds, the screen disappears.

Cancelling the Video Plus+ Timer Programme

- 1) If the ( indicator is lit, press the two **TIMER** buttons to turn it off, and turn on the VTR by pressing the **ON/STANDBY**. **25** **17**
- 2) Press the **OSP** button to display the MENU screen. **23**
- 3) Press **number button 4** to select "PROGRAM". **4**
- 4) Select a program number which you want to cancel by using **number buttons**. **4**
- 5) Press the **CANCEL** button. **24**
The line is cleared out.
- 6) Press the **OSP** button. **23**

Recording or Playback in the Timer Standby Mode

First press the two **TIMER** buttons to release the timer standby mode, and then press the **ON/STANDBY** button to turn on the VTR. The VTR will be available for use.

- Be sure to press the two **TIMER** buttons again to return the VTR to the timer standby mode after you operate. **25** **17**

If a power failure occurs during the timer programme recording

- If the ( indicator is missing in the VTR display after the power failure, the programmed contents have been cleared. Reset the timer programming.
- When power has failed for a short time, the colon of the current time display blinks. The programmed contents are not affected. Reset the clock.

Error indicators

When the "FULL (CLEAR PROG?)" message appears on the TV during programming, no more programmes can be entered. If you want to add another programme, select one existing programme on the screen by using number buttons, and press the **CANCEL** button to delete it.

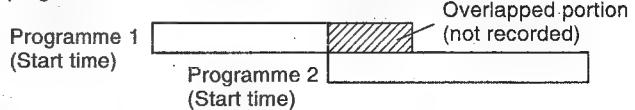
If impossible PlusCode is entered, "INVALID CODE ENTERED" blinks on the screen to tell you that the recording cannot be performed. Press the **CANCEL** button to clear the PlusCode and enter correct one.

If "CLASH" message appears on the screen during programming, it tells you that two programmes with the same recording start time have been entered. You have to make a correction. On this screen, blinking item number means that the item has been entered later.

- 1) Enter the number of the programme you want to correct using **number buttons**.
- 2) Correct the timer programme data, or clear the data by pressing the **CANCEL** button and then press the **VIDEOPLUS+** button to enter the PlusCode.

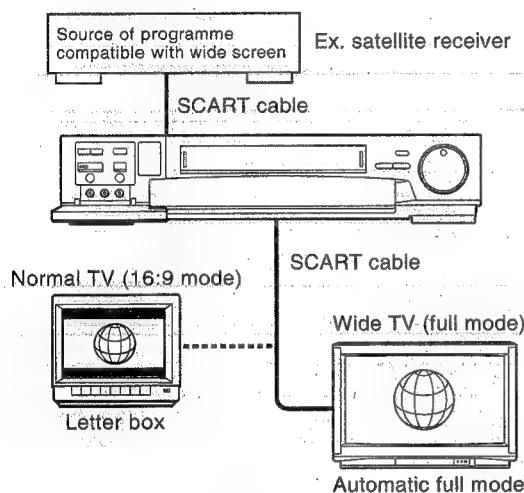
Overlaps the programmes

If two programmes overlap, the recording start time of programme 2 has a priority over the recording end time of programme 1.



16:9 (Wide Screen) Compatibility

The VTR automatically adjusts the image to fill the wide TV screen when you play back a tape commercially available which is recorded in the wide screen format, or when you record or play back a wide TV programme via the connected satellite receiver, etc.



Important

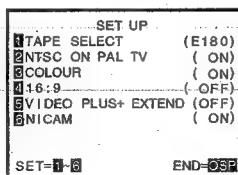
Connect equipment compatible with wide screen, to the VTR using the SCART cable.

Setting of 16:9 Wide Screen

1 Press the OSP button to display the MENU screen. 23

2 Press number button 3 to select "VTR SET UP". 4

3 Press number button 4 to set "16:9". 4



OFF: Set if you do not use a wide TV.

AUTO: Set when you use a wide TV.

The VTR automatically detects wide TV programmes and normal TV programmes.

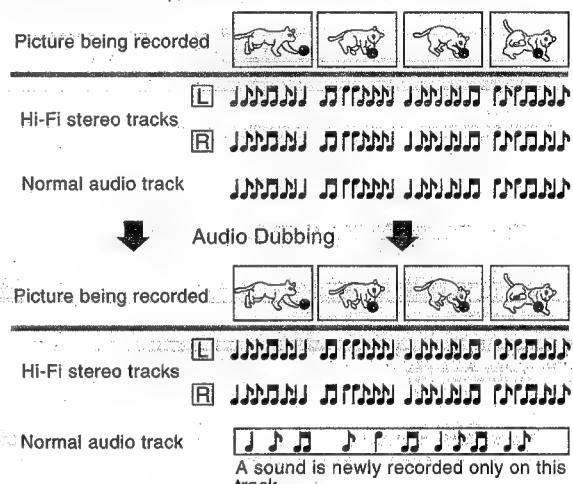
ON: The VTR is set usually in the mode compatible with 16:9 wide screen. Set if the VTR cannot detect wide TV programmes with "AUTO" set.

4 Press the OSP button twice to return to the normal TV screen. 23

Audio Dubbing

You can record sounds by importing from a microphone or an external equipment connected to the LINE IN 2 jacks, onto the normal audio track of a pre-recorded tape, without erasing the pictures or sounds on the Hi-Fi stereo track.

For example, you can record your narration on a tape which has been recorded on a camcorder.



Preparation

- To import sounds from a microphone, insert the microphone plug into the MIC jack.
- To import sounds from an external equipment, connect it to the LINE IN 2 (AUDIO) jacks and press the INPUT SELECT button to make "L2" appear in the VTR display. (In this case, be sure to pull out the microphone from the jack.)

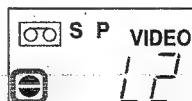
1 Load a cassette you want to make audio dubbing on. F

2 Press the PLAY button to start playback. 27

3 Press the PAUSE/STILL button where you want to start audio dubbing. 26



4 Press the A.DUB button. 10



Some flickers may be produced on the screen. This is not a malfunction.

5 Press the PAUSE/STILL button to start audio dubbing. 26

Speak into the microphone or play the sound from the external equipment.

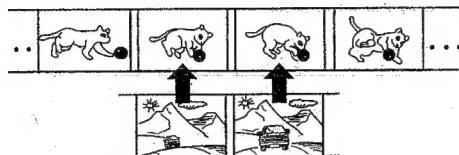
Notes

- Be sure to pull out the microphone from the jack after using.
- To monitor the recorded sound, press the A.SELECT button to select the sound output. (See page 17.)

Video Insert Editing

You can easily replace a scene on a recorded tape with another scene by importing a picture and sound from external equipment.

Recorded tape



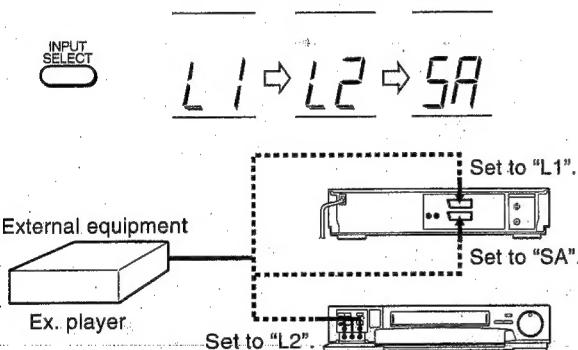
After the video insert editing



Preparation

- Select the video channel or video input mode on the TV.
- Set the VTR/TV selector to "VTR".
- Select the line input mode by pressing the INPUT SELECT button according to your connection.

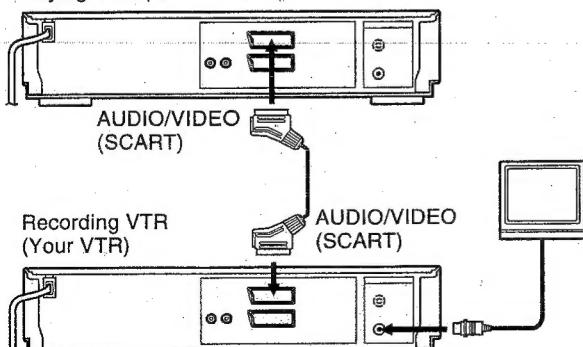
1
3



Tape Copying

Using another VTR or external equipment, you can copy a tape.

Playing VTR (Another VTR)



Important

It is permissible to record television programmes only in the event that third party copyrights and other rights are not violated.

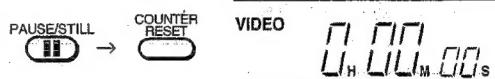
1 Search for the end point of the portion you want to replace by pressing the **PLAY** button.

27

2 At the end point, pause the picture by pressing the **PAUSE/STILL** button, and press the **COUNTER RESET** button to set the counter to "0H00M00S".

26

18



3 Rewind the tape to the starting point of the portion you want to replace by pressing the **REW** button.

9

4 At the starting point, play the tape and press the **PAUSE/STILL** button to pause the picture.

26



5 Press the **VIDEO INSERT** button.

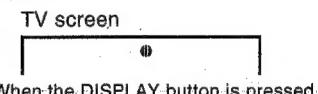
14



6 Press the **PAUSE/STILL** button to start video insert editing, and start playback on the external equipment.

26

The recording will automatically stop when the counter reaches "0H00M00S".



1 Press the **INPUT SELECT** button so that the VTR display shows "L1" or "L2" depending on your connection.

3

When using the AUDIO/VIDEO (SCART) socket



2 Press the **SP/LP** button to select the recording tape speed.

12

3 Play the tape on the playback VTR and press the **REC** buttons to start recording on this VTR.

7

C

4 Press the **STOP** button on each VTR when copying is finished.

29

N

Notes

- The picture quality of the copied tape is slightly less than the original picture quality.
- When monitoring a picture being recorded, press the **TV/VIDEO** button to make the "VIDEO" indicator appear in the VTR display and select the video channel on the TV.

2

BEFORE CALLING SERVICE PERSONNEL

Check the following symptoms before requesting service.

SYMPTOM	CAUSE	CORRECTION	Refer page
No function and no play.	• The power cable is not plugged in.	• Insert it firmly into the mains outlet.	—
The VTR does not work even though the power is turned on.	• There is no cassette in the VTR.	• Load a cassette.	15
The colon between the hour and minute digits blinks in the VTR display.	• There was a short power failure.	• Set the clock.	12
A TV picture is not good.	• The TV station is not tuned in precisely.	• Adjust it with the TV's fine tuning control.	—
	• The video channel is not set correctly.	• Set a video channel precisely.	9
	• The antenna cable is disconnected.	• Connect it again.	9, 10
	• The TV signal is weak.	• Adjust the antenna direction or use an antenna booster (not supplied).	—
	• The power cable of the VTR is not plugged in.	• Insert it firmly into the mains outlet.	—
TV broadcast cannot be received using the buttons on the VTR.	• "L1", "L2" or "SA" is displayed in the VTR display.	• Press the INPUT SELECT button so that the position number appears.	—
	• The VTR is not set to VTR mode with "SW" set.	• Press the TV/VIDEO button to make the "VIDEO" indicator appear in the VTR display.	9
Channels on the TV are not received when the VTR is on.	• The VTR is not set to TV mode with "SW" set.	• Press the TV/VIDEO button to make the "VIDEO" indicator disappear in the VTR display.	9
The NICAM broadcast cannot be received.	• "NICAM ON/OFF" is not set correctly.	• Set "NICAM" to "ON" on the SET UP screen.	24
	• NICAM reception is not available in your area.	• Check with dealer.	—
Recording cannot be performed.	• The safety tab of the cassette is removed.	• Use a cassette with a safety tab or cover the tab hole with adhesive tape.	15
A picture being recorded cannot be seen on the TV.	• The VTR is not set to VTR mode with "SW" set.	• Press the TV/VIDEO button to make the "VIDEO" indicator appear in the VTR display.	25
A picture is not obtained from the connected satellite receiver.	• "SA" is not displayed in the VTR display.	• Press the INPUT SELECT button to make "SA" appear.	26

SYMPTOM	CAUSE	CORRECTION	Refer page
Playback picture is poor or absent.	• Tracking is not adjusted appropriately.	• Adjust the tracking manually.	17
	• Tuning of the TV is not good.	• Fine tune the TV.	—
	• The video heads are dirty (beyond the head cleaner capacity).	• Consult your dealer for head cleaning.	—
	• The VTR is not set to VTR mode.	• Press the TV/VIDEO button to make the "VIDEO" indicator appear in the VTR display.	—
Hi-Fi sound is not reproduced.	•   indicators are not lit in the VTR display.	• Press the A.SELECT button to make   indicator appear in the VTR display.	17, 24
		• Ensure cassette has Hi-Fi recording.	—
Stereo and bilingual sound is not reproduced.	• Setting of the A.SELECT button is not correct.	• Press the A.SELECT button to select a desired sound output.	24
Noise is heard when playing back a pre-recorded tape.	• Tracking is not adjusted appropriately.	• Adjust the tracking manually.	17
The Video Plus+ recording cannot be done.	• GUIDE channel is not set up correctly.	• Set GUIDE channels correctly.	31, 32
Timer recording cannot be performed.	• No cassette is loaded.	• Load a cassette.	15
	• The safety tab of the cassette is removed.	• Cover the tab hole or use another cassette with a safety tab.	15
	• The timer indicator () is not displayed.	• Press the TIMER buttons.	28
	• Clock setting is not done.	• Set the clock.	12
	• There was a power failure. The clock is reset automatically.	• Try another timer recording.	—
The remote controller does not operate.	• The direction of the remote controller is wrong.	• Point the remote controller at the remote sensor of the VTR.	8
	• Too far from the remote sensor of the VTR.	• Operate it within about 7 m from the VTR.	8
	• An obstacle may be in the way of the operation.	• Remove the obstacle.	—
	• The batteries are exhausted.	• Replace all batteries.	8
	• Setting of the VTR/TV selector is not correct.	• Set to "VTR" or "TV" properly for your use.	11

SPECIFICATIONS

Format	: VHS standard
Recording system	: Rotary, 2-head helical scan system
Video heads	: 4 heads
Video signal system	: CCIR; 625 lines, 50 fields, PAL colour signal NTSC colour, 525 lines
Tape speed	: SP : 23.39 mm/s (PAL) SP : 33.35 mm/s (NTSC) LP : 11.70 mm/s (PAL) SLP : 11.12 mm/s (NTSC)
Recording time	: SP : 240 minutes with E240 cassettes (PAL) LP : 480 minutes with E240 cassettes (PAL)
Winding time	: Approx. 110 seconds with E180 cassettes
Dimensions	: 430 (W) x 92 (H) x 318.5 (D) mm
Mass	: 4.7 kg
Operating temperature	: +5 to +40°C
Operating humidity	: Less than 80% RH
Mains power	: 230/240 V AC, 50 Hz
Power consumption	: 25 W (in operation)
CONNECTORS	
Aerial input	: 75 Ω coaxial
Aerial output	: 75 Ω coaxial
Video input	: AUDIO/VIDEO SCART socket, 1.0 V(p-p), 75 Ω LINE IN 2 VIDEO Phono type jack, 1.0 V(p-p), 75 Ω
Audio input	: AUDIO/VIDEO SCART socket, 308 mV(rms), more than 10 kΩ LINE IN 2 AUDIO Phono type jacks, 308 mV(rms), more than 47 kΩ
Video output	: AUDIO/VIDEO SCART socket, 1.0 V(p-p), 75 Ω
Audio output	: AUDIO/VIDEO SCART socket, 308 mV(rms), less than 1.0 kΩ AUDIO OUT Phono type jacks, 308 mV(rms), less than 4.7 kΩ
VIDEO	
Signal-to-noise ratio	: More than 43 dB (SP tape speed/PAL)
AUDIO	
Signal-to-noise ratio	: More than 42 dB (SP tape speed/PAL/normal mono)
Frequency range	: 20 Hz to 20 kHz (Hi-Fi mode)
Dynamic range	: More than 90 dB (Hi-Fi mode)
Audio track	: 1 track (Normal-mono), 2 channels (Hi-Fi sound)
TIMER	
Clock	: 24-hour digital indication
No. of events	: 6 events 1 month
TUNER	
System	: Frequency synthesizer
Channel coverage	: PAL I VHF: A – J, UHF: E21 – E69
RF converter	: UHF channel 60 (50 – 67, adjustable)
Accessories	: Aerial cable 1 Remote control unit 1 Batteries (R03) 2

Designs and specifications are subject to change without notice.